Livelink WCM Server

Enterprise Server Integration Manual

This manual describes how to integrate Livelink WCM Server and Livelink ECM - Enterprise Server in order to use the Enterprise Server user administration for the WCM system, publish Enterprise Server items on WCM-managed websites, and use the Enterprise Server search for WCM-managed websites.

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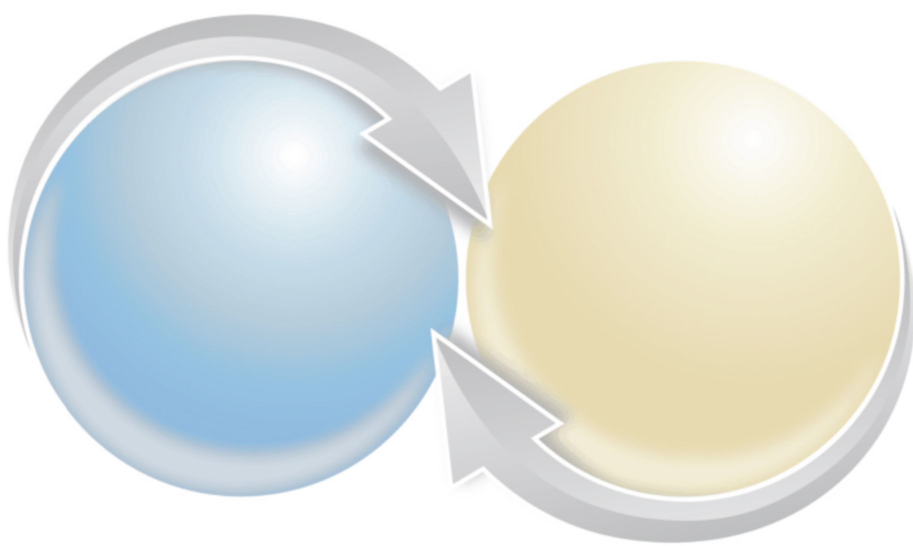

OPEN TEXT CORPORATION

Great Minds Working Together

Livelink WCM Server
Enterprise Server Integration Manual
WM090700-CLL-EN-1
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Table of Contents

Chapter 1

Introduction

Livelink Web Content Management Server™ (Livelink WCM Server for short) is a user-friendly, highly scalable, and adaptable content management system for setting up and managing sophisticated and high-performance intranet and Internet solutions.

Thanks to the integration with *Livelink ECM - Enterprise Server*™ (Enterprise Server for short), a comprehensive enterprise content management solution has been developed which covers all aspects of collaboration for creating, managing, and publishing content in intranets, *extranets*, and the Internet.

The main features of the integration are described briefly below.

Common user administration

By integrating the web content management system (WCM system for short) with the Enterprise Server, you can use the Enterprise Server user information for both systems. The user data will be stored in *Livelink ECM - Enterprise Server*. For managing principals (users, *groups*, and *roles*), you can either use the Enterprise Server user administration or the Admin client of the WCM system. Managing users belongs to the tasks of system administrators. If you are a system administrator, read about this topic in chapter “Common user administration” on page 13 .

Publishing Enterprise Server items in a website

You can use JSP pages to easily and conveniently publish Enterprise Server items, such as folders, documents, discussions, and channels, in a WCM-managed website. For this purpose, you require programming know-how. If you have the task to program JSP pages, read about this topic in chapter “Enterprise Server functions in a website ” on page 53.

Another way of publishing Enterprise Server items in a website is to add Enterprise Server items as WCM objects to a website (see also *object* in the glossary). These WCM objects are called *relators*. Relators enable you to integrate Enterprise Server contents in a website without the need of programming. If you are an editor and want to publish Enterprise Server contents in a website in an easy and comfortable way, read chapter “Livelink ECM - Enterprise Server contents in the Content client” on page 83.

Using the Enterprise Server search for a website

The Search Server Connector for *Livelink ECM - Enterprise Server* enables you to use the Enterprise Server search engine for a WCM-managed website. The configuration and administration of search engines belong to the tasks of system administrators. If you are a system administrator, read about this topic in chapter “Using the Enterprise Server search for the WCM system” on page 113 .

1.1 Integration procedure

In order to use the WCM system together with *Livelink ECM - Enterprise Server*, the following steps are required. It is presumed that the Enterprise Server is already installed.

1. Install the WCM system with an Enterprise Server user administration (system administrator).

   See *Livelink WCM Server - Installation Guide (WM-IGD)*.

2. Set up a website with the Admin client of the WCM system (system administrator).

   See online help of the Admin client

3. Edit principals, i.e. users and groups (system administrator)

   The principals must be able to access the website created in the previous step. They also need the appropriate functional areas and object rights.

   See chapter “Common user administration” on page 13.

4. Optional: Create JSP pages in order to use Enterprise Server items, such as news and discussions, in a website (web designer).

   See chapter “Enterprise Server functions in a website ” on page 53.

5. Optional: Add relators (editors).

The editors can continue to use *Livelink ECM - Enterprise Server* as their authoring environment.

See chapter "Livelink ECM - Enterprise Server contents in the Content client" on page 83.

1.2 About this manual

What this document describes

This manual describes how to integrate Livelink WCM Server and *Livelink ECM - Enterprise Server* in order to use the Enterprise Server user administration for the WCM system, publish Enterprise Server items on WCM-managed websites, and use the Enterprise Server search for WCM-managed websites. .

Note: For detailed information about installation requirements and supported software versions, refer to the Livelink WCM Server Release Notes, which are available at the Open Text Knowledge Center (https://knowledge.opentext.com/knowledge).

Target group

This guide is intended for:

- editors, web designers, and programmers who set up new websites or manage and extend existing websites with Livelink WCM Server in order to publish documents and other Enterprise Server content in an intranet, extranet, or Internet presence.
- administrators managing the system environment for the websites and integrating the WCM system with an existing Enterprise Server installation.

Structure of the guide

The following list gives a short overview of this documentation:

- Chapter 2: "Common user administration" on page 13 — describes how to set up a common user administration for *Livelink ECM - Enterprise Server* and Livelink WCM Server and how to edit principals in both products.
- Chapter 3: "Enterprise Server functions in a website " on page 53 — explains how to use the functions of the Portal Manager API and the WCM Java API to access Enterprise Server items and publish these items on WCM-managed websites..
- Chapter 4: "Livelink ECM - Enterprise Server contents in the Content client" on page 83 — explains how to edit Enterprise Server contents by means of the Content client of Livelink WCM Server
- Chapter 5: "Using the Enterprise Server search for the WCM system" on page 113 — describes the Search Server Connector for *Livelink ECM - Enterprise Server* which enables you to use the search engine integrated in *Livelink ECM - Enterprise Server* for searching WCM-managed websites.

1.3 Overview of documentation for Livelink WCM Server

Product documentation

The following documentation is available for *Livelink WCM Server*:

- ***Livelink WCM Server - Installation Guide (WM-IGD) –*** This manual describes how to install Livelink WCM Server. It also shows — based on examples — how to configure RDBMS, LDAP directory servers, web servers, and application servers for use with Livelink WCM Server.
- ***Livelink WCM Server - Administrator Manual (WM-AGD) –*** This manual describes how to configure, administer, and monitor your WCM system, i.e. manage servers, websites, deployment systems, etc.
- ***Livelink WCM Server - Content client User Manual (WMCC-GGD) –*** This documentation describes how to use the Content client and InSite Editing for editing the contents of websites managed with Livelink WCM Server.
- ***Livelink WCM Server - Enterprise Server Integration Manual (WM-CLL) –*** This manual describes how to integrate Livelink WCM Server and *Livelink ECM - Enterprise Server* in order to use the Enterprise Server user administration for the WCM system, publish Enterprise Server items on WCM-managed websites, and use the Enterprise Server search for WCM-managed websites.
- **Livelink WCM Server — Search Server Connector for Lucene Manual –** This manual describes the concepts and administration of Lucene Search servers.
- ***Livelink WCM Server - Programming Guide for the WCM Java API (WM-PJA) –*** This manual describes the Java programming interface of Livelink WCM Server, which allows external programs to use the functionality of the WCM servers.
- ***Livelink WCM Server - Programming Guide for the WCM Lightweight API (WM-PLA) –*** This manual describes the Lightweight Java programming interface of Livelink WCM Server, which allows external programs to use the functionality of the WCM servers with efficient resource usage.
- **Online help –** Online help is available for using and configuring the individual clients of Livelink WCM Server.

Release Notes

The Release Notes describe the following aspects in detail:

- The software supported by the product
- Requirements
- Restrictions
- Important dependencies
- Last-minute changes to the documentation
- Identification codes of the current documentation

The Release Notes are continually updated. The latest version of the Livelink WCM Server Release Notes is available in the Open Text Knowledge Center (https://knowledge.opentext.com/knowledge).

1.4 Conventions

Read the following conventions before you use this documentation.

Typography In general, this product documentation uses the following typographical conventions:

- *New terms*
  This format is used to introduce new terms, emphasize particular terms, concepts, long product names, and to refer to other documentation.
- **User interface**
  This format is used for elements of the graphical user interface (GUI), such as buttons, names of icons, menu items, names of dialog boxes and fields.
- `Filename`, `command`, `sample data`
  This format is used for filenames, paths, URLs and commands in the command line. It is also used for example data, text to be entered in text boxes, and other **literals**.

  Note: If a guide provides command line examples, these examples may contain special or hidden characters in the PDF version of the guide (for technical reasons). If you want to copy commands to your application or command line, use the HTML version of the guide.
- Key names
  Key names appear in ALL CAPS, for example:
  Press CTRL+V.
- <*Variable name*>
  The brackets < > are used to denote a variable or placeholder. Enter the correct value for your situation, for example: Replace <*server_name*> with the name of the relevant server, e.g. `serv01`.
- Hyperlink and Weblink (http://www.opentext.com)
  These formats are used for hyperlinks. In all document formats, these are active references to other locations in the documentation (hyperlink) and on the Internet (Weblink), providing further information on the same subject or a related subject. Click the link to move to the respective target page. (Note: The hyperlink above points to itself, and will therefore produce no result).

Tip: Tips offer extra information that may make your work more efficient, or show alternative ways of performing a task.

Note: Notes provide additional useful information, help you avoid problems and clear up misunderstandings.

Important

Important information is identified in this way. If you ignore such information, you may encounter major problems.

Caution

Cautions contain very important information that, if ignored, may cause irreversible problems. Read this information carefully and follow all instructions!

Cross-references

The documentation uses different types of cross-references:

- Internal cross-references
  Clicking on the colored part of a cross-reference takes you directly to the target of the reference. This applies to cross-references in the index and in the table of contents.
- External cross-references in PDF documents
  In PDF documents, external cross-references are references to other manuals. For technical reasons, these *external cross-references* often do not refer to specific chapters but to a manual in general.

1.5 Terminology

In this documentation, all terms relating to *Livelink ECM - Enterprise Server* start with Enterprise Server to differentiate them from other Open Text products and to keep them short. Examples are Enterprise Server item, Enterprise Server users, or Enterprise Server permission.

In the *Livelink ECM - Enterprise Server* documentation, these terms are referred to as Livelink items, Livelink users, or Livelink permissions, for example.

1.6 Contact information

There are several ways to contact Open Text:

Open Text Online

Open Text Online is a unique access point for the information provided by Open Text. You can access Open Text Online via the Internet at http://online.opentext.com/.

Information and access to resources are organized according to the following roles:

- Partners
- Business Users
- Administrators/Developers

Open Text Online offers access to the following information sources:

- Open Text Knowledge Center
- Firstlook server
- Expert Service Center

Open Text Customer Support

If you require additional help with technical problems, contact Open Text Customer Support. You can find the contact information for your region at http://www.opentext.com/services/support.html.

Feedback on the documentation

If you have any comments, questions, or suggestions to improve the documentation, you can contact us by e-mail at documentation@opentext.com.

Chapter 2

Common user administration

By integrating Livelink WCM Server with *Livelink ECM - Enterprise Server*, you can use the Enterprise Server user information for both products. The user data will be stored in *Livelink ECM - Enterprise Server*. For managing principals (users, groups, and roles), you can either use the Enterprise Server user administration or the Admin client of Livelink WCM Server.

This chapter deals with the following topics:

- "Setting up a common user administration" on page 13
- "Managing principals in the Admin client" on page 18
- "Managing principals in Livelink ECM - Enterprise Server" on page 32

2.1 Setting up a common user administration

In order to use the Enterprise Server users administration for Livelink WCM Server, you must perform the following steps:

1. Install the Enterprise Server module `WCM User Administration`, see "Installing the WCM User Administration module" on page 14.
2. Select an Enterprise Server user administration when installing the WCM system, see "Selecting the Enterprise Server user administration" on page 15.
3. Enable access to the WCM-managed websites for the Enterprise Server users and set permissions, see "Setting permissions for Enterprise Server users" on page 16.

Notes for using several WCM systems and Enterprise Servers:

Currently, the `WCM User Administration` module does not support access to several Enterprise Servers from the same WCM system (as it is possible with LDAP servers). That means that you cannot use more than one Enterprise Server user administration for the WCM system. Each WCM Admin server can only access the user administration of exactly one Enterprise Server.

Nevertheless, you can configure multipleWCM systems in such a way that they access the user administration of the same Enterprise Server. In this case, please consider the following:

- The responsible Admin server automatically updates the information on the available websites and functional areas in *Livelink ECM - Enterprise Server* each time the information is changed in one of the connected WCM systems. This means that the information on the **WCM** tab in *Livelink ECM - Enterprise Server* always reflects the state of the last WCM system that has been changed.
- All changes to the principals of one WCM system also apply to all other WCM systems connected to the user administration of the same Enterprise Server. Thus it is not possible, for example, to grant a user a specific default object right for only one WCM system.

It is possible to use items from different Enterprise Server systems in the same WCM system. For detailed information, refer to “Configuring access to multiple Enterprise Server systems” on page 56.

2.1.1 Installing the WCM User Administration module

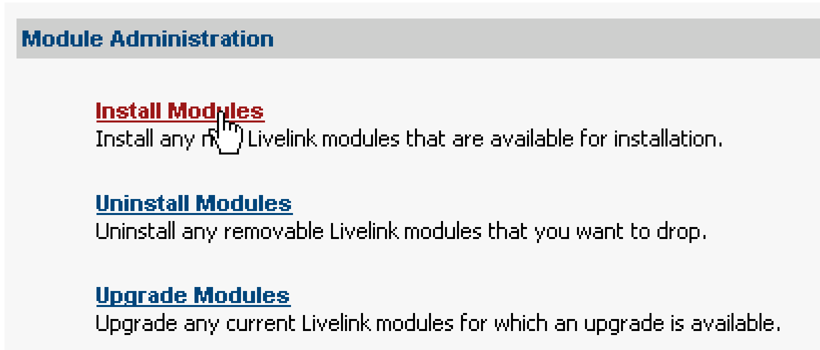
Notes:

- Installing the module is only required if you want to use the option **Enterprise Server** for the user administration when installing your WCM system.
- If the Enterprise Server user information is synchronized with an *LDAP* directory service, we recommend that you select the **LDAP** option for the user administration when installing the WCM system. In this case, you have to use the Admin client for editing WCM-specific principal settings, as the Enterprise Server user administration does not provide the **WCM** tab.
- The module must be installed **prior** to installing the WCM system.

To install the module:

1. The `WCM User Administration` module is supplied as file `wcmadm.zip`. This file is located in the `\livelink\` directory on the WCM CD. Extract the file to the directory `<Enterprise Server installation directory>\staging\`.
2. Open the **Livelink Administration** page.

   The URL is of type `http://livelinkserver.company.example/Livelink/livelink.exe?func=admin.index`.
3. Log in to the Enterprise Server system as the Admin user and go to the **Module Administration** section.



4. Click the **Install Modules** link.
5. On the **Install Modules** page, select the check box of the `WCM User Administration` module and then click the **Install** button.

   For further information on installing modules, refer to the Enterprise Server online help.

To uninstall the module:

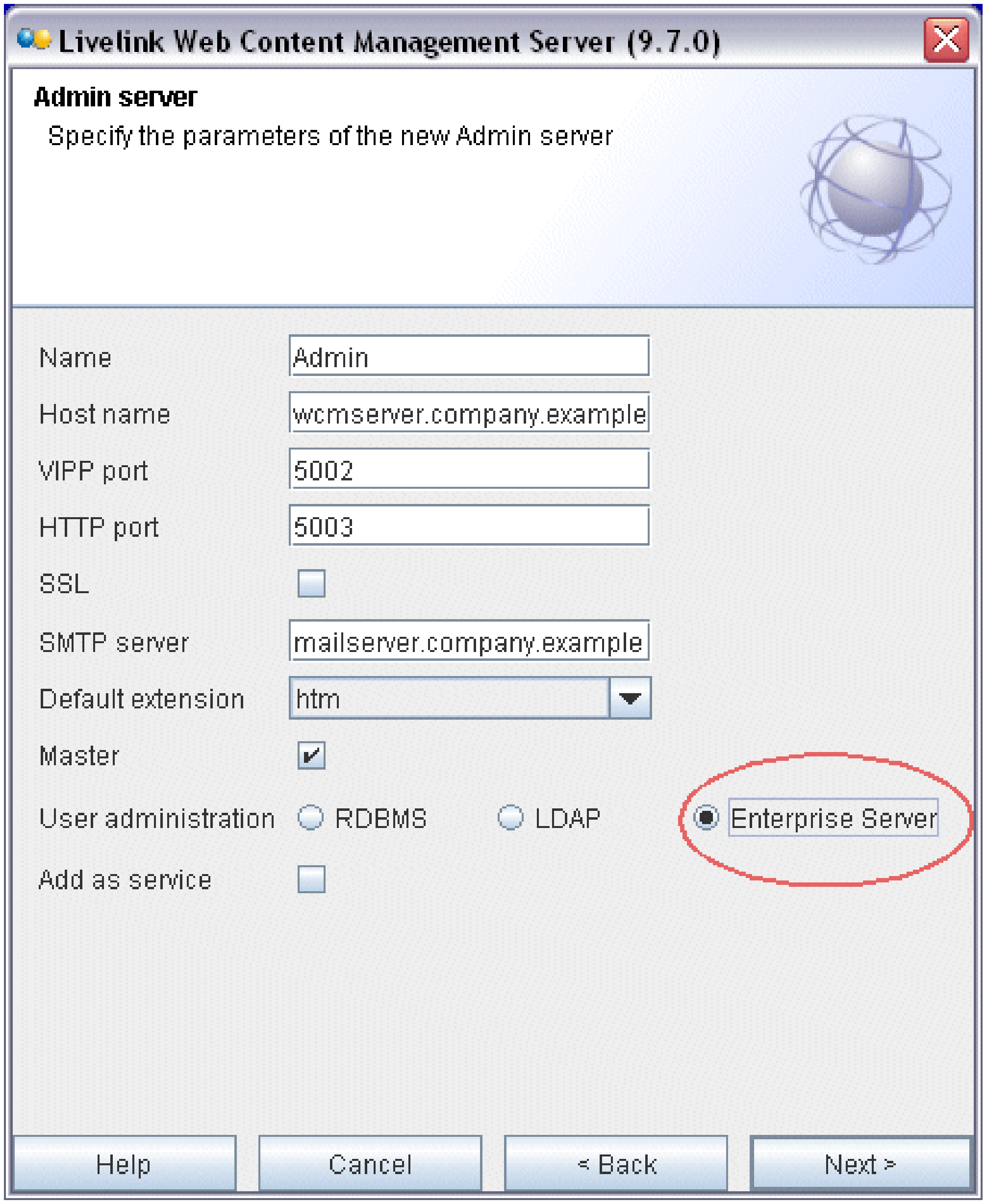
Note: After uninstalling the module, the WCM system is no longer available, as the users cannot log in. For this reason, you should **first** uninstall the WCM system and then the module.

1. Open the **Livelink Administration** page.
2. Log in to the Enterprise Server system as the Admin user and go to the **Module Administration** section.
3. Click the **Uninstall Modules** link.
4. On the **Uninstall Modules** page, click the **Uninstall** button for the `WCM User Administration` module.

   For further information on uninstalling modules, refer to the Enterprise Server online help.

2.1.2 Selecting the Enterprise Server user administration

In the **Admin server** dialog box of the WCM installation program, you specify whether the Administration server stores the user data in a relational database management system, in an LDAP directory service, or in *Livelink ECM - Enterprise Server*.



Click the **Enterprise Server** radio button. In the next dialog box, you enter the parameters for the connection to the Enterprise Server system.

For detailed information on installing the WCM system, refer to the *Livelink WCM Server - Installation Guide (WM-IGD)*.

2.1.3 Setting permissions for Enterprise Server users

After setting up a common user administration for the WCM system and the Enterprise Server, all Enterprise Server users and groups automatically have access

to the WCM system. However, they cannot access any websites yet. After the installation, you must enable website access for the principals and thus make it possible for them to work in the WCM system.

A clear access strategy allows you to control object access without great effort. Organizing users in groups is a precondition for an access strategy. Assigning rights to individual users should be the exception.

Proceed as follows:

1. Assign groups to websites.

   The assignment of groups to a website enables the users to access the website objects with the Content client.

   See “Website assignments” on page 30.

2. Assign functional areas to groups.

   Functional areas allow you to control which types of objects the users may create, *check in*, and *check out* as well as which views, dialog boxes, and functions are available to them in the Content client.

   See “Managing groups and roles in the Admin client” on page 25.

3. Repeat steps 1 and 2 for individual users, if required.

   You can either use the Admin client or the Enterprise Server user administration to make the user assignments.

   Admin client:

   - assigning websites, see “Website assignments” on page 30
   - assigning functional areas, see “Managing users in the Admin client” on page 23

   Enterprise Server: All assignments are made in the user settings, see “Editing user information in Livelink ECM - Enterprise Server” on page 39.

4. Assign administration rights for the WCM system.

   Access to the administration and configuration of the WCM system should be reserved to selected users. You can grant administration rights to users, groups, and roles.

   See “Managing groups and roles in the Admin client” on page 25, “Managing users in the Admin client” on page 23, and “Managing the rights of the principal World” on page 27.

5. Set the access rights for website topics and objects for groups, roles, and users. Use the Content client of Livelink WCM Server for this purpose. For detailed information, refer to the *Livelink WCM Server - Content client User Manual (WMCC-GGD)*.

For detailed information on access control with Livelink WCM Server, refer to Section 3.1 "How to develop an access control strategy" in *Livelink WCM Server - Administrator Manual (WM-AGD)*.

2.2 Managing principals in the Admin client

Notes:

- In order to add, edit, and delete principals in the Admin client, you need the administration right `Create, modify, delete principal`. In order to modify the administration rights of a principal, you also need the right `Change administration rights`.
- Users with appropriate administration rights in Livelink WCM Server can make changes to the user information which also affect *Livelink ECM - Enterprise Server*. These users do not require any privileges in *Livelink ECM - Enterprise Server* for this.

You can manage all users who are to access the WCM system and the Enterprise Server with the Admin client. To group users according to their tasks and the company's organizational structure and to assign special access rights, you can define groups and roles and assign functional areas.

Starting the Admin client

If the Admin client is installed on your computer, use the batch file `adminClient.bat` (Windows) or `adminClient.sh` (UNIX) to launch the client. These files are located in the directory `WCM installation directory\admin\`. To start the web application of an Admin client, open your browser and go to the URL of the web application's start page (e.g. `http://wcmserver.company.example/wcmadminclient/index.html`).

Immediately after the installation of the WCM system, the only user with administration rights is the one you entered during the installation.

Logging in and out of the Admin client

After you have started the Admin client, the **Login** dialog box opens in the language selected for installing the WCM system.

Enter your user ID and the corresponding password. If this is the first time you start the Admin client after the installation of the WCM system, enter the user ID and password of the user who was configured as the administrator during the installation process.

When you log in to the WCM system for the first time, you are asked to change your password.

Note: Both user ID and password are case sensitive. Correct use of uppercase and lowercase letters is essential. For Livelink WCM Server, `administrator` and `Administrator` are two different users.

To exit the Admin client, choose **Quit** on the **Program** menu. The connection to the Admin server will be closed. This may take some time.

Notes on common user administration with the Admin client

Due to the different concepts behind the Enterprise Server and the WCM user administrations, there are restrictions and differences when compared to the usual handling of the Admin client. The following overview lists these differences for administrators used to working with the Admin client.

- **Privileges for new users**

  A user added with the Admin client has the Enterprise Server privileges `Log-in enabled` and `Public Access enabled` and is assigned to the default group.

- **User names**

  The Admin client provides only the field **Name** for the user's name. The contents of this field can be split up into the Enterprise Server name components **First Name**, **Middle Initial**, and **Last Name**. For this purpose, first name, middle initial, and last name must be separated by at least two spaces in the Admin client.

  Example 2-1:

  The entry Joshua<*two spaces*>F<*two spaces*>Stein in the **Name** field of the Admin client is split up as follows in *Livelink ECM - Enterprise Server*:

  First Name: Joshua
  Middle Initial: F
  Last Name: Stein

- **Finding users**

  You can either use the user ID or the last name of the user for searching.

- **Group and role concept**

  The Enterprise Server provides only users and groups – no roles. For this reason, the WCM roles are represented by Enterprise Server groups.

  For each Enterprise Server group, the `WCM User Administration` module stores the information whether this group is a group or a role in the WCM system.

- **Unique names for groups and roles**

  In the WCM system, the names of groups and roles must only be unique within all groups or roles respectively. This means that a group can have the same name as a role. When storing the user data in *Livelink ECM - Enterprise Server*, however, this is not allowed as roles are represented by groups in the Enterprise Server.

- **Editing WCM-specific settings for groups**

  In *Livelink ECM - Enterprise Server*, you cannot manage additional information, such as the e-mail address, for groups. This means that you have to use the Admin client to edit WCM-specific information of groups and roles.

2.2.1 User administration functions in the Admin client

To open the user administration, click the tab 

in the Admin client. The items you can manage in this view are displayed in a tree structure.

The following unctions are available for each item.

Items and functions of the user administration in the Admin client

- **User**

  Add and configure users and edit user information

  Assign users to groups, roles, functional areas, and websites, as well as assign default object rights and administration rights

  See "Managing users in the Admin client" on page 23

- **Groups**

  Add and configure groups and edit group information

  Assign users, functional areas, and websites to groups, and define default object rights and administration rights

  See "Managing groups and roles in the Admin client" on page 25

- **Roles**

  Add and configure roles and edit role information

  Assign users, functional areas, and websites to roles, and define default object rights and administration rights

  See "Managing groups and roles in the Admin client" on page 25

- **World**

  This entry represents all users of the WCM system. You can assign administration rights to it.

  See "Managing the rights of the principal World" on page 27

- **Functional areas**

  Add functional areas and assign users, groups, and roles to functional areas

  See "Managing functional areas" on page 28

- **Websites**

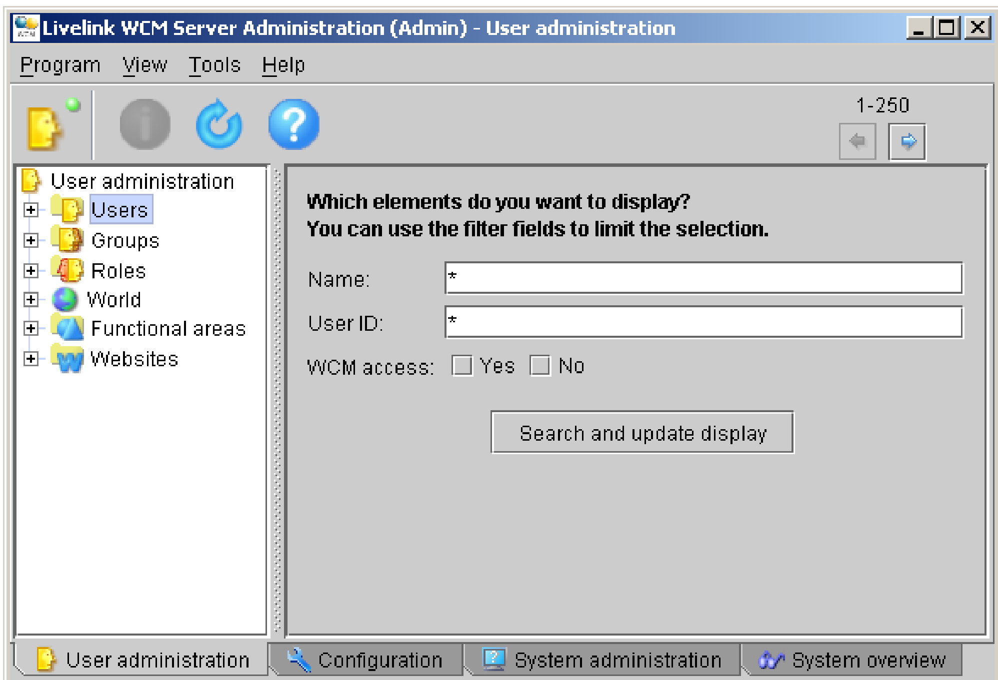
  Assign users, groups, and roles to websites

  See “Website assignments” on page 30

2.2.2 Finding principals in the Admin client

The number of principals stored in a Enterprise Server system can be very high. Loading and displaying all principals may thus take a long time. To restrict the number of items displayed, the user administration of the Admin client provides filters for principals.

The fields for the filter criteria are displayed in the right window pane when you click one of the items **Users**, **Groups**, or **Roles**.



To find principals in the Admin client:

1. Enter the criteria for the display filter. You can use the following search criteria:

   - **Name** of the principal

     Only the last name can be used to search for a user.

   - **User ID**
   - **WCM access**

   You can use the asterisk (*) character as a placeholder in searches. The asterisk replaces any number of characters before, after, or inside a search string. If you

enter `m*` in the **User ID** field, for example, the search returns a list of all users whose IDs begin with that letter, e.g. `mmoreno` or `mrossi`.

2. Confirm the search criteria with ENTER or by clicking the **Search and update display** button.

   The tree on the left is updated according to the search results. For example, after a search for individual users, the **Users** item contains only the users found in the search.

3. To display all the items again, delete the filter criteria and confirm with ENTER or by clicking **Search and update display**.

2.2.3 Managing users in the Admin client

If you expand the main item **Users** in the **User administration** view, a list showing all the users stored in your Enterprise Server system will be displayed.

Default permissions

With the installation, all Enterprise Server users are automatically granted access to the WCM system. However, they do not have any administration rights and functional areas assigned. Also, they only have the default object rights `Read` and `Read (Production)`. That means that the users cannot edit any website or modify the configuration of the WCM system.

Available functions

To add a user, select the **Users** node in the tree on the left. To modify user information or edit a user's assignments, open the user's node in the tree.

Note: Changes to a user's settings do not take effect until the user logs in to the WCM system again. As an administrator, you can log out users via **System administration** ⇒ **Registered users**.

The following functions for managing users are available via the toolbar and the context menu. For detailed information on the individual settings, refer to the Admin client's online help.

Add a user

Add a user to the user administration. If you add an Enterprise Server user, the user is assigned to the Default Group and has the privileges `Log-in enabled` and `Public Access enabled`.

Edit user information

You can change most user settings, e.g. the e-mail address or the language, subsequently.

Assign users to groups/remove assignment

When you assign a user to one or more groups, the user will receive the rights of the respective group(s). This refers to default object rights, administration rights, and functional areas.

Assign users to roles/remove assignment

When you assign a user to one or more roles, the user will receive the rights of the respective role(s). This refers to default object rights, administration rights, and functional areas.

Assign functional areas/remove assignment

Functional areas are used to determine which types of objects users may add, check out, or check in, and which dialog boxes and functions are available in the Content client. You can assign functional areas to each user individually.

Assign websites/remove assignment

If you assign a website to a user, this user can access the objects in the website, e.g. in order to edit them via the Content client. The exact access rights depend on the user's membership in groups or roles, the user's functional areas, and on the rights settings of the individual WCM objects.

Set default object rights

For each user, you can set default object rights. These settings are used as default values for the access rights when a user is added to the list of persons authorized to access an object in the Content client, i.e. when it is added to the object's ACL (*access control list*).

Important: The default object rights are only predefined settings which are displayed when a principal is added to the ACL of a WCM object. The actual access rights are defined at object level by means of the Content client. Changing the default object rights in the Admin client does not change the ACL of the WCM objects this principal is assigned to.

Assign administration rights

You can assign graduated rights for the administration of the WCM system to individual users. In this way, you can control precisely which settings the individual users can view and what changes they can make. Depending on the assigned rights, the Admin client displays only those views and functions that the user is entitled to use. For example, if the user does not have the right to view the configuration, the Admin client hides this view.

Delete user

You can remove users completely from the user administration.

Important:

- When you delete a user in the Admin client, it is removed from the database or the LDAP directory service. In the Enterprise Server, the user is marked as deleted but not removed from the database.
- If you delete a user after you have added it to the access control list of a WCM object in the Content client, the user is not automatically deleted from the list of authorized persons. You must make the necessary changes manually.
- As a result of deleting users, there may be WCM objects that can no longer be accessed by any principal. Choose **Collect orphan objects** on the **Tools** menu to assign such objects to a user.
- A user with administration rights can only be deleted by users that have the right `Change administration rights`.

2.2.4 Managing groups and roles in the Admin client

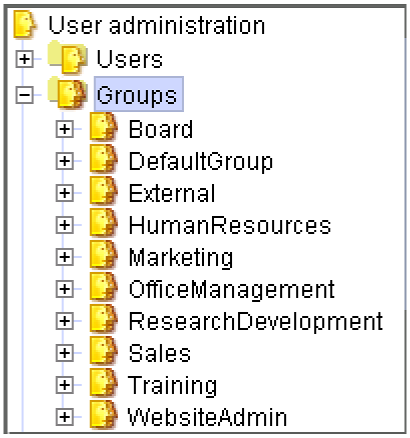
With Livelink WCM Server, you can assign the users of a website to groups and control access to the website objects by assigning rights to these groups. Usually, groups are tied to organizational structures, such as departments or projects, e.g. `Marketing` or `Sales`. Roles offer another way of classifying users. Unlike groups, roles are task-related, e.g. `IntranetAdmin` or `Editor`. For general information on controlling access by means of groups and roles, refer to Section 3 "Controlling access to the WCM system" in *Livelink WCM Server - Administrator Manual (WM-AGD)*.

Note: *Livelink ECM - Enterprise Server* provides only users and groups – no roles. For this reason, the WCM roles are represented by Enterprise Server groups. For each Enterprise Server group, the information is stored whether this group is a group or a role in the WCM system.

In *Livelink ECM - Enterprise Server*, you cannot manage additional information, such as the e-mail address, for groups. This means that you have to use the Admin client to edit WCM-specific information of groups and roles.

The procedures for managing groups and roles in the Admin client are identical and are therefore described together.

If you open the main item **Groups** or **Roles** in the **User administration** view, the available groups or roles are shown in the tree on the left.



Available functions

To add a group or role, select the **Groups** or **Roles** node in the tree on the left. To modify group/role information or edit the assignments of a group/ role, open the group's or role's node in the tree.

Note: Changes to a group or role do not take effect until the assigned users log in to the WCM system again. As an administrator, you can log out users via **System administration** ⇒ **Registered users**.

The following functions for managing groups and roles are available via the toolbar and the context menu. For detailed information on the individual settings, refer to the Admin client's online help.

Add a group/role

Add a group or role to the user administration.

Edit group/role information

You can change the e-mail address of groups and roles subsequently, as well as activate/deactivate access to the WCM system.

Assign users/remove assignment

When you assign user(s) to a group or role, the users will receive the rights of the respective group or role. This refers to default object rights, administration rights, and functional areas.

Assign functional areas/remove assignment

Functional areas are used to determine which types of objects users may add, check out, or check in, and which dialog boxes and functions are available in the Content client. You can assign functional areas to groups and roles.

Assign websites/remove assignment

If you assign a website to a group or role, the respective users can access the objects in the website, e.g. in order to edit them via the Content client. The exact access rights depend on the group and role settings, the assigned functional areas, and on the rights settings of the individual WCM objects.

Set default object rights

For each group or role, you can set default object rights. These settings are used as default values for the access rights when a group or role is added to the list of persons authorized to access an object in the Content client, i.e. when it is added to the object's ACL (*access control list*).

Important: The default object rights are only predefined settings which are displayed when a principal is added to the ACL of a WCM object. The actual access rights are defined at object level by means of the Content client. Changing the default object rights in the Admin client does not change the ACL of the WCM objects this principal is assigned to.

Assign administration rights

You can assign graduated rights for the administration of the WCM system to groups and roles. In this way, you can control precisely which settings the respective users can view and what changes they can make. Depending on the assigned rights, the Admin client displays only those views and functions that the user is entitled to use. For example, if the group or role does not have the right to view the configuration, the Admin client hides this view.

Delete group/role

You can remove groups and roles completely from the user administration.

Important:

- If you delete a group or role after you have added it to the access control list of a WCM object in the Content client, this change does not take effect automatically. You must update the list of authorized persons manually.
- As a result of deleting groups or roles, there may be WCM objects that can no longer be accessed by any principal. Choose **Collect orphan objects** on the **Tools** menu to assign such objects to a user.
- A group or role with administration rights can only be deleted by users that have the right `Change administration rights`.
- If you delete an LDAP group or role, the corresponding entry will be removed completely from the LDAP directory service.

2.2.5 Managing the rights of the principal World

The principal `World` represents all users of the WCM system. Technically speaking, it is a group. The administration rights of this principal are valid for all users of the

WCM system in addition to the administration rights that have been set for the individual users or for the assigned group or role.

Note: By default, all users (i.e. `World`) have only access to the user administration in the Admin client. We recommend that you do not change this setting in order to reserve access to the configuration and system administration to administrators.

When you modify the administration rights of the principal `World`, you proceed in the same way as for users and groups.

The online help of the Admin client provides an overview of the administration rights.

2.2.6 Managing functional areas

Functional areas perform two essential tasks:

- They determine which types of objects the users may add, check out, and check in. Some functional areas, such as `Basic`, are by default assigned to *object types*. Only users that have the corresponding functional area can add, check in, and check out objects of this object type.
- They determine which views and dialog boxes are available to the user in the Content client.

For general information on functional areas, refer to Section 3.5.1 "Understanding functional areas" in *Livelink WCM Server - Administrator Manual (WM-AGD)*.

If you open the main item **Functional areas** in the **User administration** view, a list of available functional areas is displayed.

Available functions

To assign functional areas to object types, open the **Configuration** view of the Admin client.

The following functions for managing functional areas are available via the toolbar and the context menu. For detailed information on the individual settings, refer to the Admin client's online help.

Adding custom functional areas

Select **User administration** ⇒ **Functional areas** to add a custom functional area. The new functional area will be available after the Administration server has been restarted. A new functional area must be assigned to a principal and to one or more object types to take effect.

View assignment to object types

Select **User administration** ⇒ **Functional areas** ⇒ **<name of the functional area>** to view the settings of a specific functional area. These settings also include the object types assigned to this functional area. The default object types available after installing Livelink WCM Server are already assigned to the default functional areas.

Assign functional areas to object types

By assigning a functional area to an object type, you ensure that only principals with this functional area can add, check out, or check in WCM objects of this type. To change the default assignments or to assign custom functional areas and/or custom object types, open the **Configuration** view of the Admin client and select **Websites** ⇒ **<website name>** ⇒ **Object types** ⇒ **<name of object type>** ⇒ **Assignments** tabs.

Assign functional areas to principals

Select **User administration** ⇒ **Functional areas** ⇒ **<Functional area name>** to assign a functional area to a principal, i.e. a group, role, or user. Assign the principals those functional areas they require in order to edit certain object types or use certain functions in the Content client. Example: the functional area `Form` is by default required for editing form instances; the functional area `Access rights dialog` is required for editing the access rights of an object in the Content client.

Notes:

- If a user is assigned to one functional area due to group or role assignments and to another functional area due to individual assignments, both functional areas apply to the user.
- Changes to the functional area assignments do not take effect until the respective users log in to the WCM system again. As an administrator, you can log out users via **System administration** ⇒ **Registered users**.

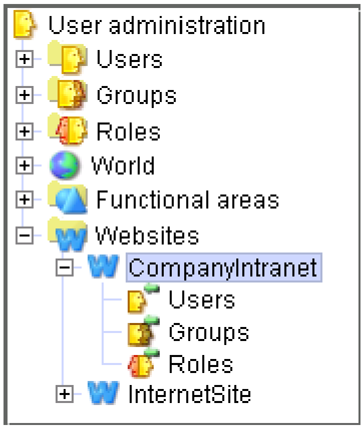
Delete a custom functional area

Select **User administration** ⇒ **Functional areas** ⇒ **<Functional area name>** to delete a functional area.

2.2.7 Website assignments

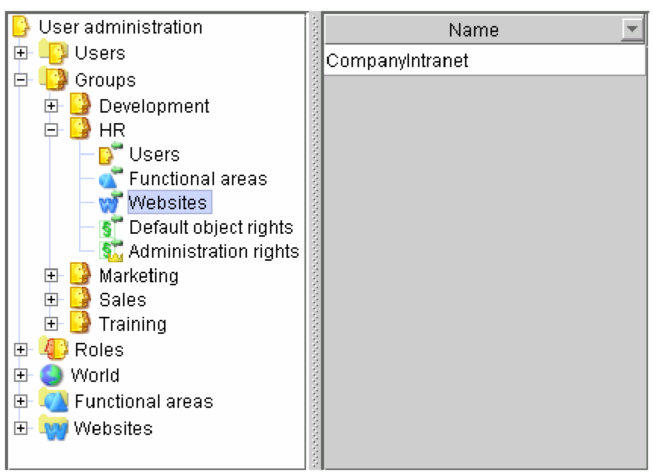
In the **User administration** view, you can use the main item **Websites** to assign users, groups, and roles to websites. To create and configure websites, change to the **Configuration** view of the Admin client. For more information, refer to Section 2 "Managing websites" in *Livelink WCM Server - Administrator Manual (WM-AGD)*.

Open the main item **Websites** to display the list of assignments to users, groups, and roles.



How to check access

- To check which users, groups, and roles are allowed to access a specific website, select **User administration** ⇒ **Websites** ⇒ **<website name>** ⇒ **Users/Groups/Roles**. The assigned principals are listed in the right window pane.
- To check which website(s) a user is allowed to access, select **User administration** ⇒ **Users** ⇒ **<user ID>** ⇒ **Websites**. The assigned websites are listed in the right window pane.
- To check which website(s) the members of a group or role are allowed to access, select **User administration** ⇒ **Group** or **Role** ⇒ **<group/role name>** ⇒ **Websites**. The assigned websites are listed in the right window pane.



Available functions

Use the functions on the context menu and the toolbar to assign principals to a website and to remove the assignments. For detailed information, refer to the Admin client's online help.

Assign a principal, i.e. a user, group, or role to a website that you selected via **User administration ⇒ Websites ⇒ <website name>**.

Remove the assignment of a principal to a website. Select **User administration ⇒ Websites ⇒ <website name> ⇒ Users/Groups/Roles** and select the principal in the right window pane.

Assign a website to a selected principal and remove the assignment.

If you assign a website to a user, group, or role, the respective users can access the objects of this website via the Content client. The exact access rights depend on the users's memberships in groups and roles, the users's functional areas, and on the rights settings of the individual WCM objects.

Note: If you modify the website assignments, the changes do not take effect until the relevant users log in to the WCM system again. As an administrator, you can log out users via **System administration ⇒ Registered users**.

2.3 Managing principals in *Livelink ECM - Enterprise Server*

Important

A user with the appropriate Enterprise Server privileges can make changes to the user information which also affect the WCM system. These users do not require any administration rights in the WCM system for this.

You can manage all users who are to access the WCM system and the Enterprise Server system, in the Enterprise Server user administration. To group users according to the company's organizational structure and to assign appropriate privileges, you can create groups. For detailed information on privileges, refer to the Enterprise Server online help.

To open the Enterprise Server user administration:

1. Enter the URL of the Enterprise Server system in the address field of your browser.

The URL is of type
`http://livelinkserver.company.example/Livelink/livelink.exe`

2. Log in to *Livelink ECM - Enterprise Server* as an administrator.

   Note: Both user ID and password are case sensitive. Correct use of uppercase and lowercase letters is essential. For *Livelink ECM - Enterprise Server*, `Admin` and `admin` are two different users.

3. Choose **Users & Groups** on the **Enterprise** menu.

   The **Users and Groups** page opens.

Notes on managing users with *Livelink ECM - Enterprise Server*

Due to the different concepts behind the Enterprise Server and the WCM user administrations, there are restrictions and differences when compared to the usual handling of the Enterprise Server user administration. For administrators used to working with the Enterprise Server user administration, the following overview lists these differences.

- **Privileges for new users**

  Provided that the user has the Enterprise Server privilege `Log-in enabled`, the user can also log in to the WCM system as the **WCM Access** check box is selected by default. In the WCM system, the user initially has the access rights `Read` and `Read (Production)`.

- **User name and log-in name**

  A WCM user must have a name in addition to the user ID. For users who only have a log-in name in *Livelink ECM - Enterprise Server*, the log-in name is used as **both** the user ID **and** the name in the Admin client.

Livelink ECM - Enterprise Server provides three fields for the name of a user: **First Name**, **Middle Initial**, and **Last Name** (e.g. `Joshua`, `F`, and `Stein`). The contents of the **Name** field in the Admin client is built from these name components (`Joshua F Stein`).

- **E-mail address**

  A WCM user needs a valid e-mail address. If you want to use the notification functions of the WCM system, you should specify an e-mail address for all users in *Livelink ECM - Enterprise Server*.

  The Admin client assigns a default e-mail address to all users who are stored in the Enterprise Server database without an e-mail address. For this purpose, the system uses the e-mail address of the person who is to be notified if the WCM licenses expire or are exceeded. This e-mail address is not stored in the Enterprise Server data storage.

  To use a different default e-mail address, you have to edit the KUAF table in the Enterprise Server database. Use the following SQL command:

  ```
  update KUAF set MAILADDRESS = '<default e-mail address>' where
  TYPE = 0 and MAILADDRESS is null
  ```

- **Editing WCM-specific settings of users**

  Use the 

 tab to edit the WCM-specific user settings in *Livelink ECM - Enterprise Server*.

- **Handling of roles**

  The WCM system differs between groups and roles, whereas the Enterprise Server only provides groups. For this reason, the WCM roles are represented by Enterprise Server groups. Thus, you cannot distinguish between WCM groups and roles in *Livelink ECM - Enterprise Server*.

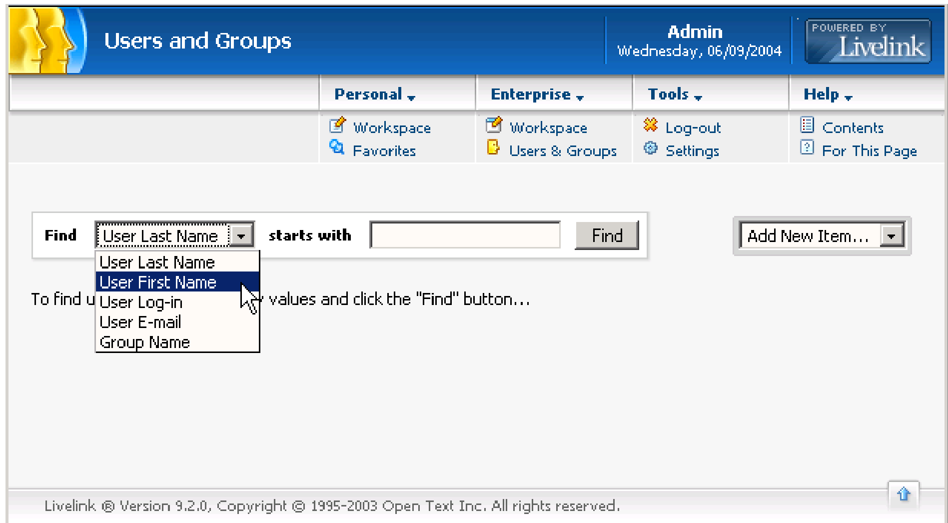
  Use the Admin client for editing roles.

2.3.1 Finding principals in *Livelink ECM - Enterprise Server*

The search functions of the Enterprise Server user administration enable you to quickly find the right entry, even with a large number of users and groups.

To find principals in *Livelink ECM - Enterprise Server*:

1. Choose **Users & Groups** on the **Enterprise** menu.
2. On the **Users and Groups** page, click the desired search parameter in the **Find** drop-down list.



You can use the following search parameters:

- **User Last Name** (default setting)
- **User First Name**
- **User Log-in**
- **User E-mail**
- **Group Name**

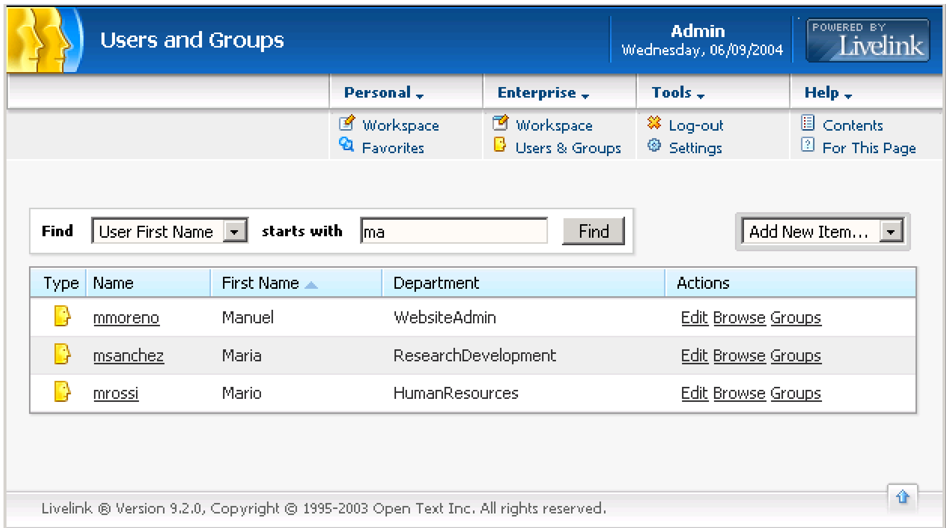
3. Type a search term in the **starts with** field.

Notes:

- The value you supply for the search parameter is **not** case sensitive. For example: If you enter `ma` for the first name of a user, information on all users whose first names start with `ma` or `Ma` is displayed.
- If you leave the **starts with** field blank, the Enterprise Server retrieves all users or groups in the system.

4. Click the **Find** button.

The search results are displayed on the **Users and Groups** page.

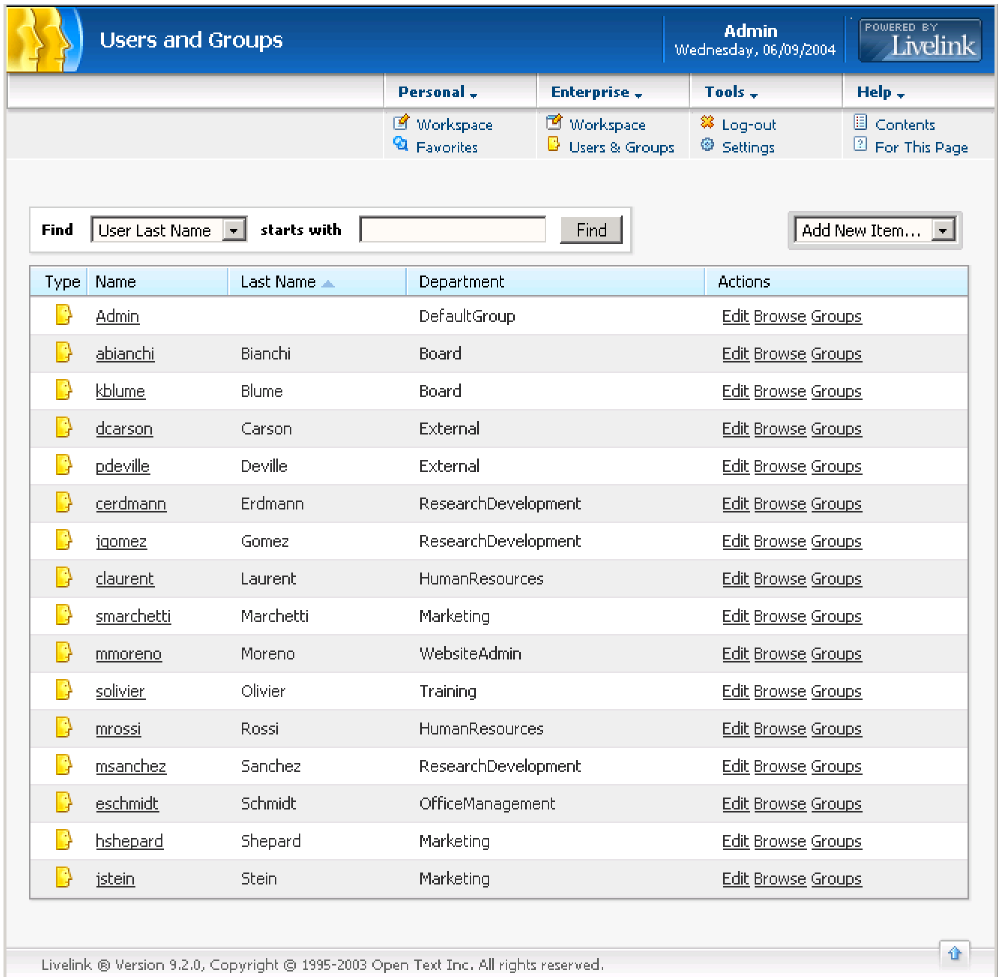


Provided that you have the appropriate privileges, the **Actions** column contains the following links.

- **Edit**: Click this link to modify the settings of a principal.
- **Browse**: Click this link to view the Personal Workspace of a user.
- **Groups**: Click this link to view information on the group(s) that the user belongs to.

2.3.2 Managing users in *Livelink ECM - Enterprise Server*

If you leave the field **starts with** on the **Users and Groups** page blank and click the **Find** button, the Enterprise Server retrieves all users in the system.

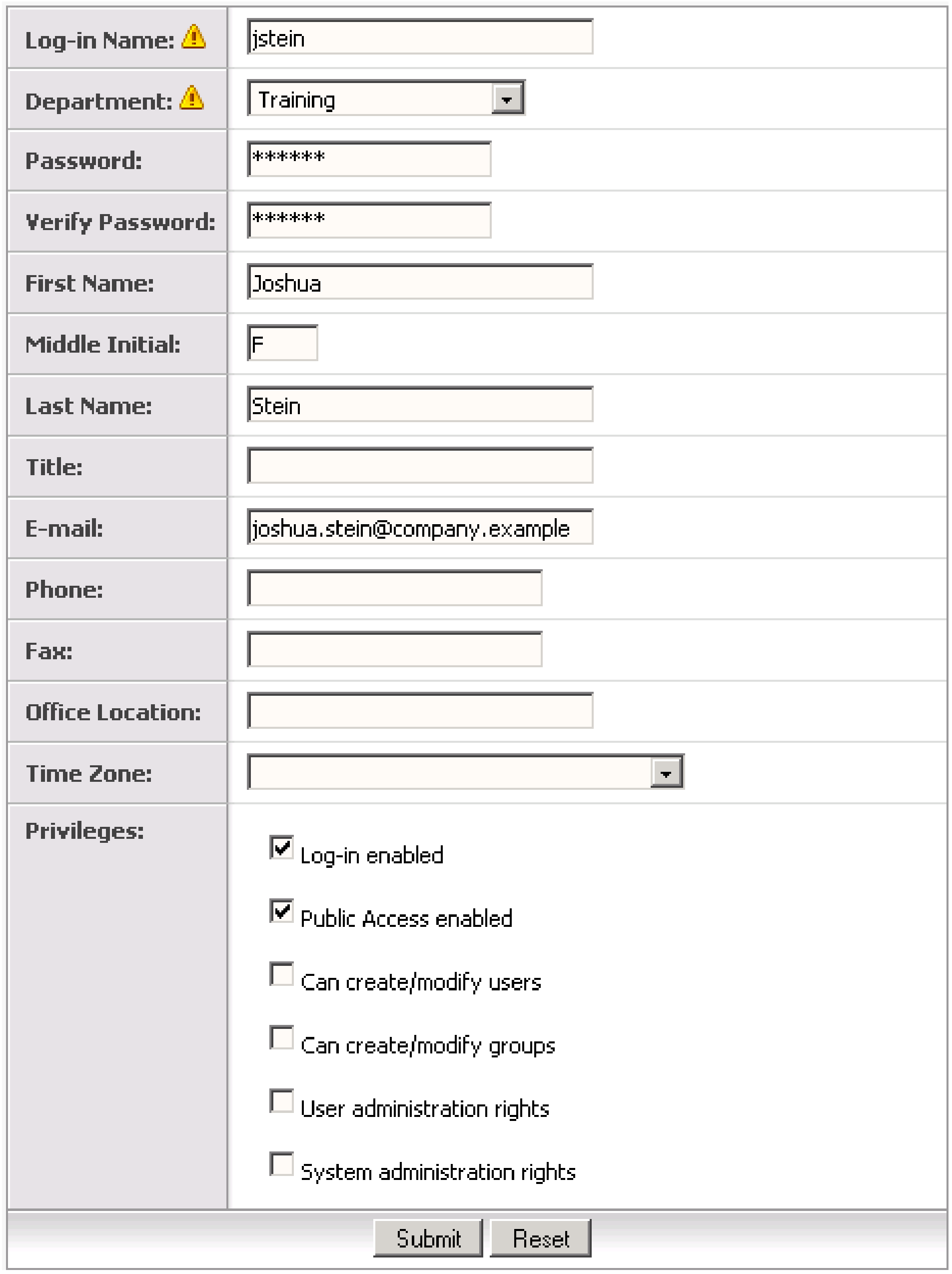


The following functions are available to you for managing users:

- "Adding a user in Livelink ECM - Enterprise Server" on page 37
- "Editing user information in Livelink ECM - Enterprise Server" on page 39
- "Deleting a user in Livelink ECM - Enterprise Server" on page 45

Adding a user in *Livelink ECM - Enterprise Server*

1. Choose **Users & Groups** on the **Enterprise** menu.
2. On the **Users & Groups** page, choose **User** on the **Add New Item** menu.
3. Define the settings for the user on the **Add New User** page.



For detailed information on the individual fields, refer to the Enterprise Server online help.

4. Click the **Submit** button.

Notes:

- Provided that the user added to *Livelink ECM - Enterprise Server* has the privilege `Log-in enabled`, the user can also log in to the WCM system as

the WCM access is enabled by default. In the WCM system, the user initially has the access rights `Read` and `Read (Production)`.

- The log-in name is used as the user ID in the WCM system. A WCM user must have a name in addition to the user ID. For users who only have a log-in name in *Livelink ECM - Enterprise Server*, the log-in name is used as **both** the user ID **and** the name in the Admin client.
- *Livelink ECM - Enterprise Server* provides three fields for specifying the name of a user: **First Name**, **Middle Initial**, and **Last Name** (e.g. “Joshua”, “F”, and “Stein”). The contents of the **Name** field in the Admin client is built from these name components (“Joshua F Stein”).
- In order to change the WCM administration rights of users, you have to use the Admin client.
- A WCM user needs a valid e-mail address. If you want to use the notification functions of the WCM system, you should specify an e-mail address for each user in *Livelink ECM - Enterprise Server*.

  The Admin client assigns a default e-mail address to all users who are stored in the Enterprise Server database without an e-mail address. For this purpose, the system uses the e-mail address of the person who is to be notified if the WCM licenses expire or are exceeded. This e-mail address is not stored in the Enterprise Server data storage.

  To use a different default e-mail address, you have to edit the KUAF table in the Enterprise Server database. Use the following SQL command:

```
update KUAF set MAILADDRESS = '<default e-mail address>' where
TYPE = 0 and MAILADDRESS is null
```

Editing user information in *Livelink ECM - Enterprise Server*

In *Livelink ECM - Enterprise Server*, all information about a user is stored in the so-called user profile. To view the user profile, click the user's log-in name on the **Users and Groups** page.

User information is stored on the following tabs:

The **General** tab contains the settings which were made when the user was created.

The **Personal** tab contains items as a photograph, birthday, and personal interests. All entries on this tab are optional.

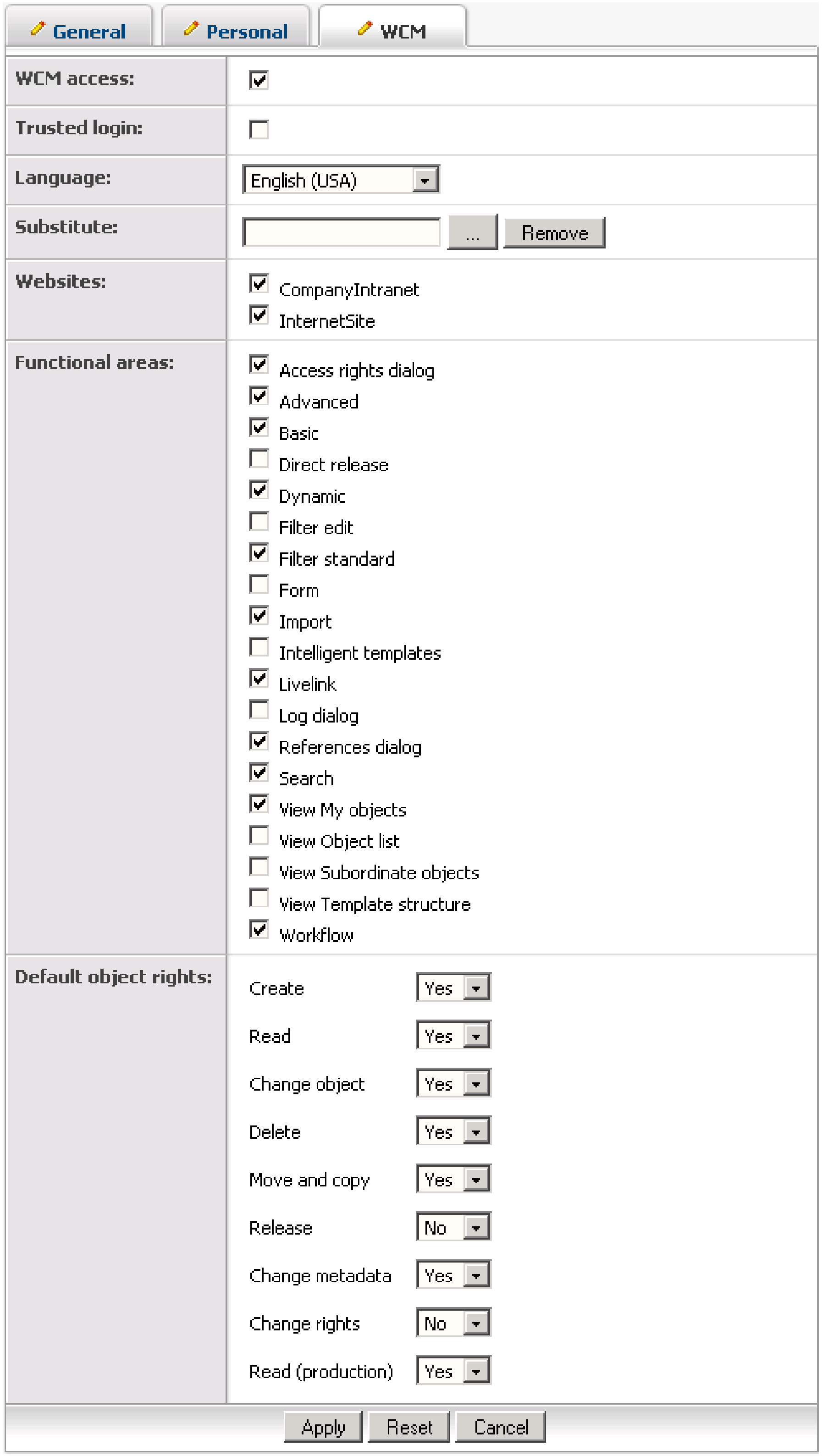
The **WCM** tab is only available if you use a common user administration for the Enterprise Server and the WCM system. This tab contains the user's WCM-specific settings, such as access rights, as well as assignments to functional areas and websites.

The Admin user is allowed to edit all user profiles. Users who have the `User administration rights` privilege are allowed to edit all profiles with the exception

of the Admin user. Users with the privilege `Can create/modify users` are allowed to change the profiles of the users they create.

To change the user information on one of the tabs in *Livelink ECM - Enterprise Server*:

1. Choose **Users & Groups** on the **Enterprise** menu.
2. Use the search functions on the **Users and Groups** page to find the user (see “Finding principals in Livelink ECM - Enterprise Server” on page 34).
3. Click the user's **Edit** link in the **Actions** column.
4. Select one of the tabs, e.g. the **WCM** tab.


General
Personal
WCM
WCM access:
Trusted login:
Language:
English (USA)
Substitute:
...
Remove
Websites:
CompanyIntranet
InternetSite
Functional areas:
Access rights dialog
Advanced
Basic
Direct release
Dynamic
Filter edit
Filter standard
Form
Import
Intelligent templates
Livelink
Log dialog
References dialog
Search
View My objects
View Object list
View Subordinate objects
View Template structure
Workflow
Default object rights:
Create
Yes
Read
Yes
Change object
Yes
Delete
Yes
Move and copy
Yes
Release
No
Change metadata
Yes
Change rights
No
Read (production)
Yes
Apply
Reset
Cancel

5. Make the desired changes.

   For information on the individual fields on the **General** and **Personal** tabs, refer to the Enterprise Server online help. The settings on the **WCM** tab are described in the following section.

6. Click the **Apply** button.

Settings on the WCM tab

- **WCM access**

  If you want to block the user's access to the WCM system, clear this check box. In this way, you prevent a user from accessing the WCM system without having to delete the user profile. The user can still log in to *Livelink ECM - Enterprise Server*.

- **Trusted login**

  Here you can define whether this user is allowed to perform a trusted login. If you select this check box, the user does not need any further authentication for accessing other WCM products after initial login to the WCM system.

- **Language**

  The preferred language of the user. Click the desired entry in the **Language** drop-down list. In the Configuration dialog box of the Content client, the user can also select a language for the client. This setting takes priority over the setting on this tab and cannot be changed by the administrator.

- **Substitute**

  Click the  button to select a substitute for this user from a list. In the Content client, the user selected here can log in as the substitute for the user. The substitute may perform all functions for which the user is authorized.

  Click the **Remove** button to unassign the substitute.

- **Websites**

  If you want to change the assigned website(s) of the user, select or clear the check boxes of the website(s).

  The assignment to a website enables the user to access the website objects with the Content client.

- **Functional areas**

  The functional areas are used to determine which types of WCM objects the user may edit and which dialog boxes and functions are available in the Content client.

  If you want to change the assigned functional area(s) of the user, select or clear the check boxes of the functional area(s). The following table shows the default functional areas available after the installation of the WCM system.

Table 2-1: Functional areas and object types

Functional area (`internal name`)	Default assignment to object type	Allowed view or function in the Content client
Basic (`VIP`)	Excel document, GIF image, HTML page, JPEG image, PDF document, PNG image, PowerPoint file, Other, Topic, Compound object, Word document, XML document	Add, check out, or check in objects based on these object types
Advanced (`ADVANCED`)	Frame, Frame topic, HTML template, XML template	
Dynamic (`DYNAMIC`)	Assembled object, ASP page, ASP template, ASP topic, CGI script, Form template, JavaScript, JSP page, JSP template, JSP topic, PHP page, PHP template, PHP topic, XSLT document, XSLT template	
Form (`FORM`)	Form instance	
Intelligent Templates	none	Not used by default, required for compatibility with VIP 5e
Workflow (`WORKFLOW`)	Workflow	Assign workflows to objects, remove workflow assignments
Enterprise Server (`LIVELINK`)	none	View the **Enterprise Server metadata** dialog box
Direct release (`DIRECT_RELEASE`)		Edit the option **Direct release** in the metadata
References dialog (`REFERENCES`)		View the **References** dialog box
Access rights dialog (`ACCESS_RIGHTS`)		View the **Access rights** dialog box
Log dialog (`LOG`)		View the **Log** dialog box
Filter standard (`FILTER_STANDARD`)		Use standard filters
Filter edit (`FILTER_EDIT`)		Create or edit filters in the filter editor
View Subordinate objects (`OBJECTLIST`)		**Subordinate objects** view

Functional area (internal name)	Default assignment to object type	Allowed view or function in the Content client
View Object list (LISTVIEW)		**Object list** view
View My objects (FILTER_TODO)		**My objects** and **My work list** views
View Template structure (TEMPLATE_STRUCTURE)		**Template structure** view
Import (IMPORT)		Use import functions
Search (COMI_SEARCH)		Use search functions

- **Default object rights:**

  These settings are used as preset access rights when a user is added to the list of persons authorized to access an WCM object in the Content client.

  If you want to change one or several default object rights, click **Yes** (object right is explicitly allowed), **No** (object right is explicitly forbidden), or the empty entry (object right not set) in the drop-down list of the right.

  Table 2-2 gives an overview of the actions you can perform on WCM objects and the required access rights. For detailed information on object rights, refer to Section 2 "Concepts" in *Livelink WCM Server - Content client User Manual (WMCC-GGD)*.

Table 2-2: Actions and required object rights

Action	Required object rights
Add object	Read + Create + Change object (for the parent topic)
Delete object	Read + Delete + Change object
Submit object	Read + Change object
Edit an object (check out, change, check in)	Read + Change object
Change an object's *metadata*	Read + Change metadata
Change an object's references	Read + Change metadata
Rename object	Read + Change metadata
Move object	Read + Move and copy + Change metadata (for the source object)

Action	Required object rights
Copy object	Read + Move and copy + Change metadata (for the source object)
Insert object (after cutting or copy-ing)	Read + Create (for the target topic)
Check access rights of object	Read
Change access rights of object	Read + Change rights + Change metadata
Release or reject object	Read + Release
Release object directly	Read + Change object
Destroy object	Read + Release

Additional information on the WCM tab

- The lists of websites and functional areas are updated every time the WCM Administration server is started and the configuration is changed. For this reason, the **WCM** tab does not display any websites and functional areas directly after installing the `WCM User Administration` module. The list will not be updated before you install the WCM system and create websites.
- You can add functional areas with the Admin client. *Livelink ECM - Enterprise Server* initially shows the internal names of these custom functional areas. To display the names of the functional areas in the user's language, create translations with the Livelink Builder.

Deleting a user in *Livelink ECM - Enterprise Server*

The Admin user and all users with the privilege `User administration rights` are allowed to delete any user. Also, users with the privilege `Can create/modify users` are allowed to delete the users they create.

To delete a user in *Livelink ECM - Enterprise Server*:

1. Choose **Users & Groups** on the **Enterprise** menu.
2. Use the search functions on the **Users and Groups** page to find the user (see "Finding principals in Livelink ECM - Enterprise Server" on page 34).
3. Click the user's **Edit** link in the **Actions** column.
4. Click the **Delete User** button.
5. Confirm the security prompt by clicking the **OK** button.

   The user is removed from all groups of which the user was a member. The user's profile is not removed from the database, but is marked as deleted so that

the user's information will still be displayed when viewing audit logs and item permissions.

2.3.3 Managing groups in *Livelink ECM - Enterprise Server*

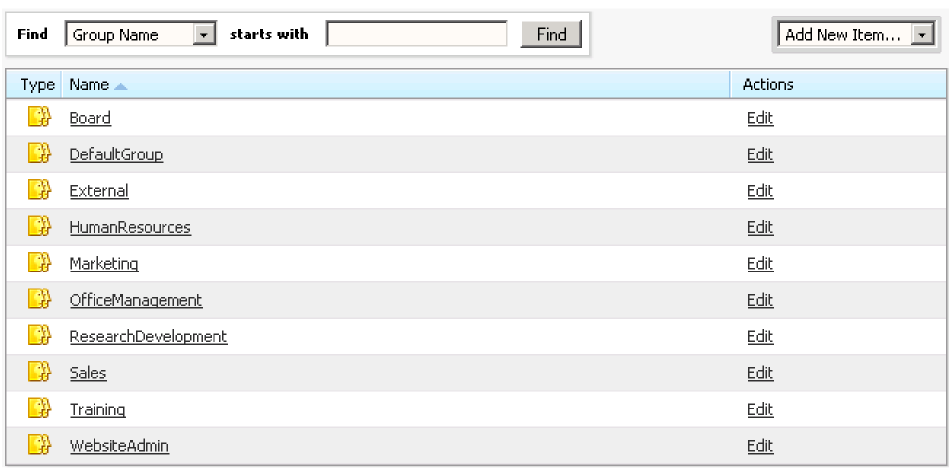
Note: The WCM system differs between groups and roles, whereas *Livelink ECM - Enterprise Server* only provides groups. For this reason, the WCM roles are represented by Enterprise Server groups. Thus, you cannot distinguish between WCM groups and roles in *Livelink ECM - Enterprise Server*.

Use the Admin client for editing roles.

To display the list of existing groups

1. Choose **Users & Groups** on the **Enterprise** menu.
2. On the **Users and Groups** page, click **Group Name** in the **Find** drop-down list.
3. Click the **Find** button.

   A list of all existing groups is displayed.



Directly after the installation of *Livelink ECM - Enterprise Server*, only the `DefaultGroup` exists. By default, this is the department group of the Admin user.

The following functions are available to you for managing groups:

- "Adding a group in Livelink ECM - Enterprise Server" on page 46
- "Editing group information in Livelink ECM - Enterprise Server" on page 47
- "Deleting a group in Livelink ECM - Enterprise Server" on page 50

Adding a group in *Livelink ECM - Enterprise Server*

1. Choose **Users & Groups** on the **Enterprise** menu.

2. On the **Users & Groups** page, choose **Group** on the **Add New Item** menu.
3. Type a unique name for the new group in the **Group Name** field.

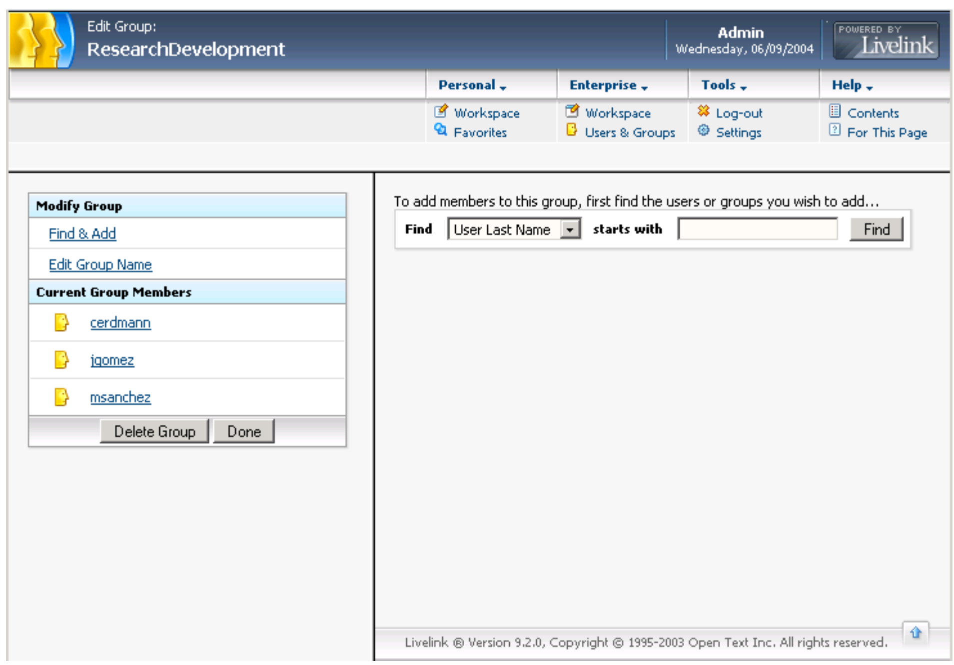
4. Click the **Submit** button.

Editing group information in *Livelink ECM - Enterprise Server*

The **Edit Group** page allows you to change the settings of a group.

To edit group information:

1. Choose **Users & Groups** on the **Enterprise** menu.
2. Use the search functions on the **Users and Groups** page to find the group (see "Finding principals in Livelink ECM - Enterprise Server" on page 34).
3. Click the group's **Edit** link in the **Actions** column.



You can do the following on the **Edit Group** page:

- add a user or subgroup to a group
- set the group leader

- change a group name
- delete a member from a group

To add a new member (user or group) to a group in *Livelink ECM - Enterprise Server*:

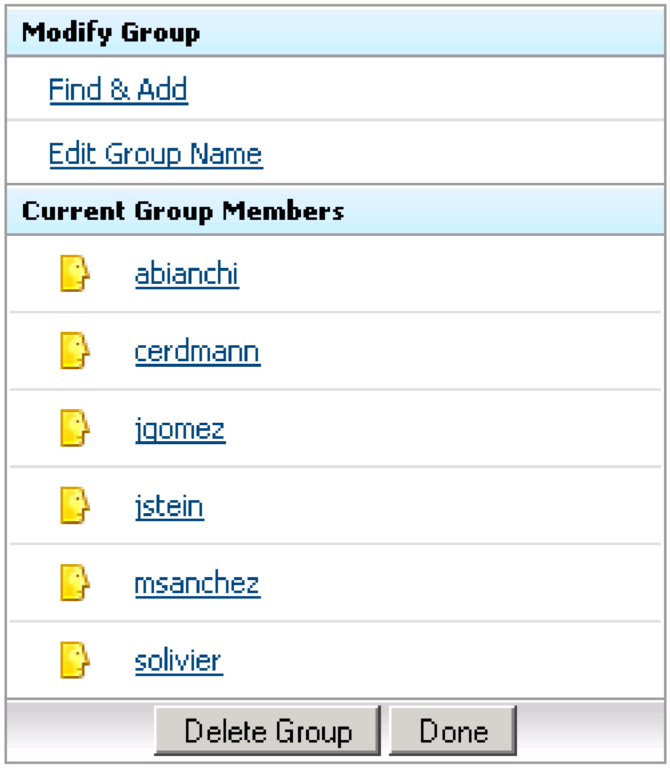
1. On the **Edit Group** page, click the **Find & Add** link to display the Search bar in the right frame, if not present.
2. Use the Search bar to display the users or groups you want to add as new members to the group.
3. Select the user's or group's **Add to group** check box.

Type	Name	Last Name	Department	Actions
	Admin		DefaultGroup	☐ Add to group
	abianchi	Bianchi	Board	☑ Add to group
	kblume	Blume	Board	☐ Add to group
	dcarson	Carson	External	☐ Add to group
	pdeville	Deville	External	☐ Add to group
	cerdmann	Erdmann	ResearchDevelopment	
	jgomez	Gomez	ResearchDevelopment	
	claurent	Laurent	HumanResources	☐ Add to group
	smarchetti	Marchetti	Marketing	☐ Add to group
	mmoreno	Moreno	WebsiteAdmin	☐ Add to group
	solivier	Olivier	Training	☑ Add to group
	mrossi	Rossi	HumanResources	☐ Add to group
	msanchez	Sanchez	ResearchDevelopment	
	eschmidt	Schmidt	OfficeManagement	☐ Add to group
	hshepard	Shepard	Marketing	☐ Add to group
	jstein	Stein	Marketing	☑ Add to group

Submit

4. Click the **Submit** button.

   On the left side of the window, the names of the new group members are displayed.



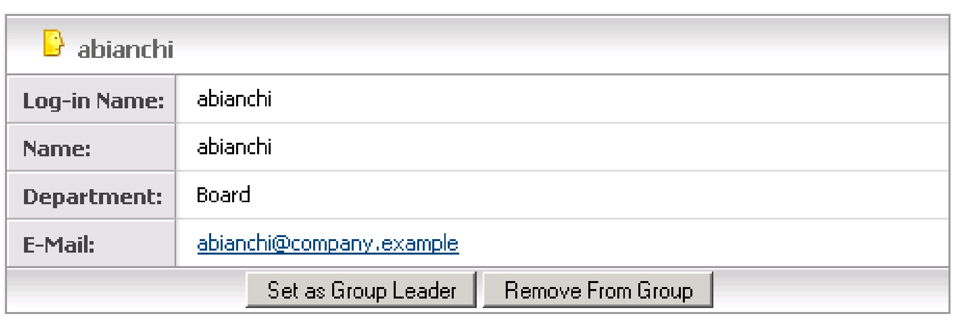
To set the group leader in *Livelink ECM - Enterprise Server*:

Any group member can be selected as the group leader. Every group can have exactly one group leader. Setting a new group leader automatically unsets the previous group leader. The previous group leader returns to regular member status.

The group leader always has the privilege to edit or delete the group. The leader does not require the privilege `Can create/modify groups` or `User administration rights` for this purpose.

1. In the **Current Group Members** section of the **Edit Group** page, click the name link of the member that you want to set as the group leader.

   The user information is displayed in the right window pane.



2. Click the **Set as Group Leader** button.

   A Leader icon replaces the User icon to identify the user as the group leader.

To unset the group leader in *Livelink ECM - Enterprise Server*:

1. In the **Current Group Members** section of the **Edit Group** page, click the name link of the group leader.
2. Click the **Unset as Group Leader** button in the right window pane.

   The user returns to regular member status and is marked with the User icon.

To change a group name in *Livelink ECM - Enterprise Server*:

Important

Changing a group name in *Livelink ECM - Enterprise Server* corresponds in the WCM system to deleting the group and adding a new group with identical settings. The WCM objects's access control lists which contained the original group are not modified automatically.

1. On the **Edit Group** page, click the **Edit Group Name** link.
2. Type the new group name in the **Group Name** field.
3. Click the **Submit** button.

To remove a member from a group in *Livelink ECM - Enterprise Server*:

Note: You cannot remove a member from his or her base group.

1. In the **Current Group Members** section of the **Edit Group** page, click the name link of the user that you want to remove from the group.
2. Click the **Remove From Group** button.

Deleting a group in *Livelink ECM - Enterprise Server*

Notes:

- The deleted group is removed from all groups of which the group was a member. The members are removed from the deleted group. The users themselves are not deleted, however.
- If you delete a group which is the department group for some users, these users automatically become members of the default group. For this reason, you should **never** delete the default group.

To delete a group in *Livelink ECM - Enterprise Server*:

1. Choose **Users & Groups** on the **Enterprise** menu.
2. Use the search functions on the **Users and Groups** page to find the group.
3. Click the group's **Edit** link in the **Actions** column.
4. Click the **Delete Group** button.
5. Confirm the security prompt by clicking the **OK** button.

Chapter 3

Enterprise Server functions in a website

Livelink WCM Server provides simple and comfortable methods for accessing special Enterprise Server items, such as folders, documents, channels, and discussions, and for publishing these items on a website. In the examples of this chapter, WCM-managed JSP pages are used to access the Enterprise Server items. The Portal Manager API of Livelink WCM Server provides Java beans for programming such JSP pages. The Portal Manager API is based on the WCM Java API which offers extensive functions for accessing *Livelink ECM - Enterprise Server*. This chapter provides application examples to illustrate the usage of these *APIs*.

The chapter deals with the following topics:

- "Preparations for Enterprise Server functions in a website" on page 53
- "Configuring access to multiple Enterprise Server systems" on page 56
- "Overview of Portal Manager API and WCM Java API" on page 59
- "Application examples" on page 61

3.1 Preparations for Enterprise Server functions in a website

Before you can use Enterprise Server functions in your website, you must take the following steps:

1. Install the Enterprise Server `WCM Kernel Integration` module, see "Installing the WCM Kernel Integration module" on page 54.
2. Activate the Enterprise Server functions for the website, see "Activating the Enterprise Server functions for the website" on page 55.
3. Add a Enterprise Server *pool*, see "Adding a Enterprise Server pool" on page 55.
4. Assign the Enterprise Server pool to the master Content server, see "Assigning the Enterprise Server pool to the master Content server" on page 56.

The individual steps are described in the following sections.

3.1.1 Installing the WCM Kernel Integration module

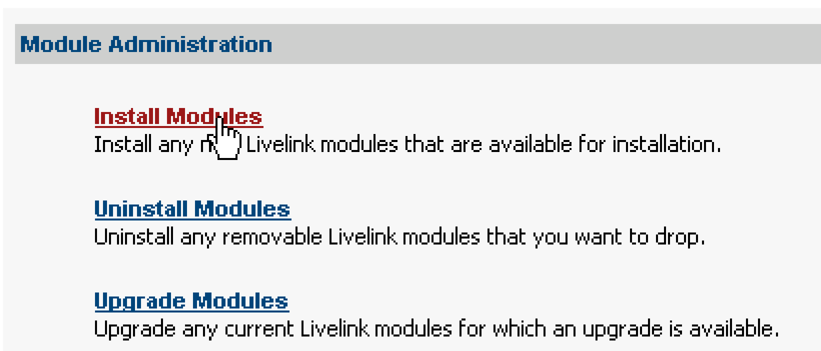
The Enterprise Server `WCM Kernel Integration` module enables Livelink WCM Server to access Enterprise Server items. It is also responsible for automatically updating relators (for which the **Update Edit version automatically** option is activated) when the associated Enterprise Server item changes.

To install the module:

1. The `WCM Kernel Integration` module is supplied as a file named `wcmobj.zip`. This file is located in the `\livelink\` directory on the WCM CD. Extract the file to the directory `<`*`Enterprise Server installation directory`*`>\staging\`.
2. Open the **Livelink Administration** page.

   The URL is of type
   `http://livelinkserver.company.example/Livelink/livelink.exe?func=`

   `admin.index`.
3. Log in to the Enterprise Server system as the Admin user and go to the **Module Administration** section.

4. Click the **Install Modules** link.
5. On the **Install Modules** page, select the check box of the `WCM Kernel Integration` module and then click the **Install** button.

   For further information on installing modules, refer to the Enterprise Server online help.

To uninstall the module

1. Open the **Livelink Administration** page.
2. Log in to the Enterprise Server system as the Admin user and go to the **Module Administration** section.
3. Click the **Uninstall Modules** link.

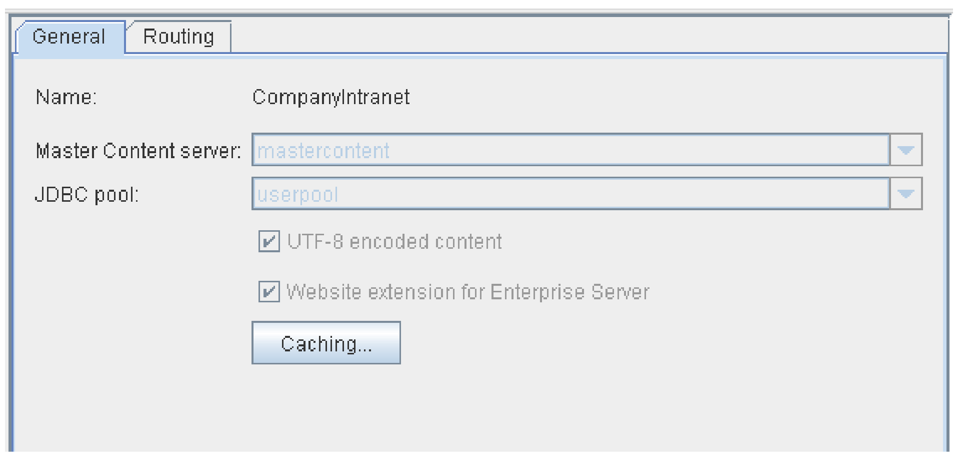
4. On the **Uninstall Modules** page, click the **Uninstall** button for the `WCM Kernel Integration` module.

   For further information on uninstalling modules, refer to the Enterprise Server online help.

3.1.2 Activating the Enterprise Server functions for the website

1. Launch the Admin client (see “Starting the Admin client” on page 18).
2. Log in to the Admin client.
3. Select **Configuration** ⇒ **Websites** ⇒ **<*website name*>**.
4. Choose **Enterprise Server extension** on the context menu.
5. Confirm the security prompt by clicking the **Yes** button.

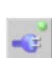
   On the **General** tab of the website settings, the check box **Website extension for Enterprise Server** is selected.



   As a consequence, the two repositories `LivelinkObjectRepository` and `LivelinkUserRepository`, the `LivelinkApplication` application, and the `Enterprise Server relator` object type are automatically created in the WCM system.

3.1.3 Adding a Enterprise Server pool

1. In the Admin client, select **Configuration** ⇒ **Pools** ⇒ **Enterprise Server**.
2. Choose **New pool** on the context menu or click the corresponding icon.

 Icon for adding a pool

3. The wizard for adding a pool starts.

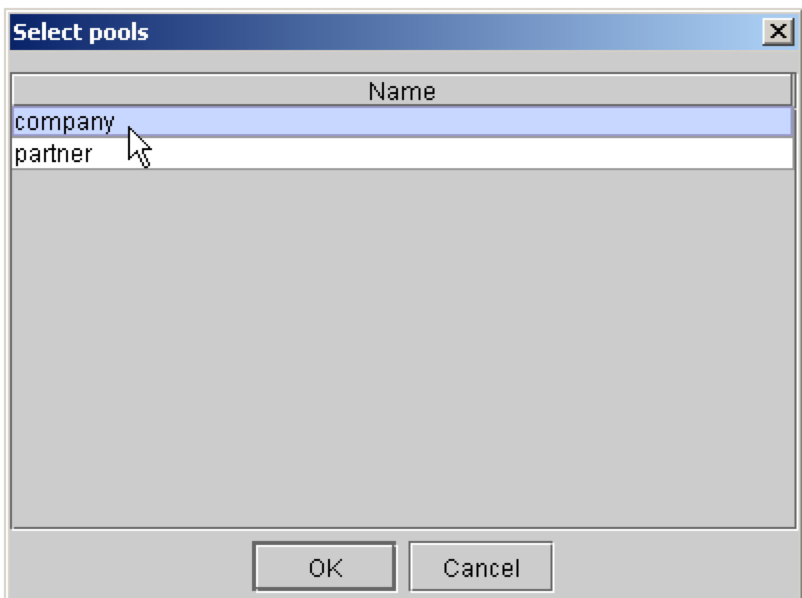
   The wizard is described in more detail in the online help of the Admin client.

3.1.4 Assigning the Enterprise Server pool to the master Content server

1. In the Admin client, select **Configuration** ⇒ **Servers** ⇒ ***<name of the master Content server>*** ⇒ **Pools**.
2. Choose **Assign pool** on the context menu or click the corresponding icon.

    Icon for assigning a pool to a server

3. In the **Select pools** dialog box, mark the desired pool.



4. Confirm by clicking the **OK** button.

3.2 Configuring access to multiple Enterprise Server systems

You can configure Livelink WCM Server to set up connections to several physical Enterprise Server systems or connections to different entry points in the same Enterprise Server system. This enables you, for example, to publish items from different Enterprise Server systems on the same website.

To configure access to multiple Enterprise Server systems:

1. Add Enterprise Server pools.

   In the Admin client, add a separate Enterprise Server pool for each Enterprise Server system that you want to integrate and for each entry point respectively.

   See "Adding a Enterprise Server pool" on page 55.

2. Assign the Enterprise Server pools to the corresponding Content servers.

   See "Assigning the Enterprise Server pool to the master Content server" on page 56.

3. Shut down the *WCM servers*.

   a. In the Admin client, select **System administration** ⇒ **Active servers**.

   b. Choose **Set run level for all servers** on the context menu or click the corresponding icon.

       Icon for setting the run level of all servers

   c. Select the **Server not available** run level and click the **OK** button.

4. Modify the `livelink-systems.xml` file.

   The `livelink-systems.xml` file is located in the directory `WCM installation directory\config\`. For each Enterprise Server system or entry point, add a separate <livelink-system> element to the configuration file.

   For a detailed descriptions of the elements in the `livelink-systems.xml` file, refer to "Elements of the livelink-systems.xml" on page 57.

5. Start the WCM servers.

   a. Start the Admin server by means of the file `<`*`Admin server name`*`>.bat` or `<`*`Admin server name`*`>.sh` which is located in the WCM installation directory.

   b. Use the file `startvip.bat` or `startvip.sh` to start the other WCM servers. This file is also located in the WCM installation directory. For starting WCM servers running in an application server, use the appropriate function of the application server.

      Starting the servers in this way also starts up the websites.

   The Enterprise Server systems configured above are now available when you work in the Content client or write JSP pages based on the Portal Manager API or the WCM Java API.

Elements of the `livelink-systems.xml`

```
<livelink-system name="Livelink_1">
```
Name of the Enterprise Server system

```
<default>true</default>
```

You can configure one Enterprise Server system as the default Enterprise Server system. The LivelinkObjectBean will initially use the default Enterprise Server system.

```
<poolname>
<default>livelink_1-pool</default>
<server name="Proxy_server">proxy-livelink_1-pool</server>
</poolname>
```

Name of the Enterprise Server pool

If more than one Content server accesses the Enterprise Server system, you can configure a separate Enterprise Server pool for each Content server.

```
<rootnodeid>123456789</rootnodeid>
```

ID of the entry point into the Enterprise Server system. This entry is optional. If you do not specify a root node ID, the Enterprise Workspace will be used as the starting point.

```
<url>http://livelink.company.example/Livelink</url>
```

URL of the Enterprise Server system. This entry is optional.

```
<llview>llview.exe</llview>
```

Name of the viewer program used for the preview functionality in *Livelink ECM - Enterprise Server*

```
<objectcache>
<strategy>de.gauss.vip.[...].ObjectWiperImpl</strategy>
<cache_reduce_interval>7200000</cache_reduce_interval>
<class>de.gauss.vip.[...].DisplacingObjectCache</class>
<max>2500</max>
<min>2000</min>
<wipe_strategy>time</wipe_strategy>
</objectcache>
```

Enterprise Server items can be loaded from the database into the cache to speed up access to the items.

<max>: Maximum number of items in the cache

<min>: Number of items to which the cache is reduced in server idle times

<cache_reduce_interval>: Interval in milliseconds. If the items in the cache are not accessed during this period, items are removed from the cache until the minimum cache size is reached again.

```
<principalcache>
<strategy>de.gauss.vip.[...].ObjectWiperImpl</strategy>
<cache_reduce_interval>7200000</cache_reduce_interval>
<class>de.gauss.vip.[...].DisplacingObjectCache</class>
<max>20</max>
<min>10</min>
<wipe_strategy>time</wipe_strategy>
</principalcache>
```

Principals can be loaded from the database into the cache to speed up access to the principals.

This element has the same parameters as the `<objectcache>` element.

3.3 Overview of Portal Manager API and WCM Java API

This section provides a basic overview of handling Enterprise Server items using the Portal Manager API or the WCM Java API. In order to learn how to write code based on the APIs, refer to “Application examples” on page 61.

For detailed information on how to use individual interfaces, beans, and methods for the integration with *Livelink ECM - Enterprise Server*, refer to the Javadoc. The Javadoc documentation is located in the directory `WCM installation directory\documentation\javadoc\`.

3.3.1 Portal Manager API

The Portal Manager API provides the following beans for integration with *Livelink ECM - Enterprise Server*:

- `de.gauss.vip.portalmanager.LivelinkObjectBean`

  This is the main bean for accessing Enterprise Server items, such as documents, folders, discussions, and projects. Several `create` methods for adding items directly in *Livelink ECM - Enterprise Server* can be called via this bean.

- `de.gauss.vip.portalmanager.LivelinkUserBean`

  This bean enables access to users and groups stored in *Livelink ECM - Enterprise Server*.

The interface definitions for the actual Enterprise Server items are contained in the WCM Java API. The Portal Manager API gives you access to instances of these interfaces.

3.3.2 WCM Java API

Enterprise Server item types

The following table provides an overview of the supported Enterprise Server item types and their equivalents in the WCM Java API. As a rule, the interface names are built from the Enterprise Server term and the prefix `Livelink`.

Table 3-1: Enterprise Server item types and their equivalents in the WCM Java API

Enterprise Server item type	Interface in the WCM Java API	Package `de.gauss.livelink. ...`
Alias	`LivelinkAlias`	`object`
Document	`LivelinkDocument`	`object`
Folder	`LivelinkFolder`	`object`
Rendition	`LivelinkRendition`	`object`
URL	`LivelinkURL`	`object`
Version	`LivelinkVersion`	`object`
Workspace	`LivelinkWorkspace`	`object`
Channel	`LivelinkChannel`	`object.channel`
News	`LivelinkNews`	`object.channel`
Discussion	`LivelinkDiscussion`	`object.discussion`
Topic	`LivelinkTopic`	`object.discussion`
Reply	`LivelinkReply`	`object.discussion`
Project	`LivelinkProject`	`object.project`
Milestone	`LivelinkMilestone`	`object.project`
Task	`LivelinkTask`	`object.project`
Task list	`LivelinkTaskList`	`object.project`

The `LivelinkObject` interface constitutes the basis for the other interfaces. All interfaces mentioned above are directly or indirectly derived from `LivelinkObject` and thus inherit the methods of `LivelinkObject`.

Note: When you add Enterprise Server items using the `LivelinkObjectBean` of the Portal Manager API, the `LivelinkId` of the parent item must be specified. Please note that such a parent item must always be of type `LivelinkFolder` or must be derived from an item of this type.

Enterprise Server users and groups

Enterprise Server users and groups can also be accessed via the WCM Java API.

Table 3-2: Enterprise Server users and groups and their equivalents in the WCM Java API

Enterprise Server term	Interface in the WCM Java API	Package `de.gauss.livelink. ...`
User	`LivelinkUser`	`admin`
Group	`LivelinkGroup`	`admin`

The `LivelinkUser` and `LivelinkGroup` interfaces are directly derived from the `LivelinkPrincipal` interface and thus inherit the methods of `LivelinkPrincipal`.

3.3.3 Enterprise Server permissions

In order to read or add Enterprise Server items, the user profile that is used for logging in must have the required permissions in *Livelink ECM - Enterprise Server*. These are:

- `See Contents` for reading the metadata and the content of Enterprise Server items
- `See Contents` and `Add Items` for adding Enterprise Server items via the WCM APIs

For some Enterprise Server item types which are similar to folders, such as discussions or channels, *Livelink ECM - Enterprise Server* offers a simplified permission scheme. In this case, the rights `Read` or `Write` must be set for read or write access respectively.

Permissions when accessing several Enterprise Server systems

You can configure more than one Enterprise Server system for your WCM system. Each Enterprise Server system manages separate user profiles which contain, among other things, the user permissions. When a user accesses an item, the system will only check the permissions which the user has for the connected Enterprise Server system. It will not consider the user profile of the WCM system.

3.4 Application examples

You can use WCM-managed JSP pages to access special Enterprise Server items, such as folders, documents, channels, and discussions, in a convenient fashion. This section provides application examples which illustrate how to use the Portal Manager API and the WCM Java API.

Note: The examples in this section show extracts from the technical concepts of the demo website `LiveStart`. The sample code cannot be executed as such; it is only provided for illustrating how to use the API functionality and how the JSP pages interact. The demo application `LiveStart` provides fully functional code. `LiveStart` is supplied as file `livestart-9.5.0.zip`. The ZIP file is located on the WCM CD in the `\examples\` directory.

This section contains the following examples:

- "Integrating content from a Enterprise Server folder in a website" on page 62
- "Implementing an Enterprise Server browser" on page 65
- "Integrating an Enterprise Server channel in a website" on page 69
- "Integrating Enterprise Server discussions in a website" on page 72
- "Polling on the website" on page 78

3.4.1 Integrating content from a Enterprise Server folder in a website

This application example illustrates how to display content and metadata of Enterprise Server documents in your website. The permissions of the current user are implicitly evaluated. The example contains a simple login mechanism.

Scenario

The training department of your company manages all training materials in *Livelink ECM - Enterprise Server*. You want to publish some of these materials on the website and provide personalized access to the documents.

Procedure

1. All documents contained in a Enterprise Server folder are displayed in a list (`list.jsp`).
2. The user can log in to the system (`login.jsp`) and thus access additional documents.
3. Clicking a document name opens a new browser window displaying the content of the document (`show.jsp`).

Listing documents of a Enterprise Server folder (`list.jsp`)

Using instances of the `LivelinkObject` interface, you can retrieve item information from the connected Enterprise Server system. You need the node ID of the corresponding Enterprise Server item for this.

The following sample code first creates an instance of `LivelinkObject`. The associated Enterprise Server item with the node ID 42 is a folder. After this, selected metadata of the documents contained in this folder is output in a loop.

```
<jsp:useBean id="llObjBean" scope="session"
class="de.gauss.vip.portalmanager.LivelinkObjectBean" />
<%
// initialize bean
llObjBean.init(request);
// retrieve Enterprise Server item instance
int nodeId = 42;
LivelinkObject llobj = llObjBean.get(new LivelinkId(nodeId));
if (llobj != null) {
```

```
  // get children of Enterprise Server item and iterate through them
  List l = llobj.getChildrenIds();
  for (int i=0; i<l.size(); i++) {
    // get an instance of the i-th document in the folder
    LivelinkId temp = (LivelinkId)l.get(i);
    LivelinkObject tempObj = llObjBean.get(temp);
    if (tempObj != null) {
      // extract metadata to show
      String comment = tempObj.getComment();
      LivelinkUser user = tempObj.getUser();
%>
<b>name: <a href="show.jsp?nodeId=<%= temp.getNodeId() %>">
  <%= tempObj.getName() %></a></b><br />
<b>comment: <%= comment %> </b><br />
<b>created on: <%= tempObj.getAttribute(new StringValue("createdate")) %></b><br/>
<b>created by: <%= user.getFirstName() %> <%= user.getLastName() %>
(<%= user.getName() %>)</b><br />
<hr />
<%
      }
    }
  }
// Display login/logout button
%>
Logged in as: <%= SessionBean.getCurrentUserProfile(request).getName() %><br/ >
<a href="Login.jsp">login</login><br />
```

The node ID of the Enterprise Server folder is specified directly in the code to simplify the example. You can also specify the node ID as a metadata item. The metadata item should be of type `Enterprise Server ID`. You can use *WCM tags* to include metadata items in code (e.g. `{VIPLIVELINKID format="nodeid"}`).

User Login (`login.jsp`)

The `SessionBean` – a Portal Manager API class – associates an application server session with a context in the WCM system. The bean provides functions for logging users in to and out of the WCM system and for accessing user profiles.

The following sample first checks whether the user must log in. If so, the system displays the corresponding form for entering user ID and password. After the system has evaluated the login information, the JSP page is called again and the user is logged in. After login, the user will be directed to the page `list.jsp`.

```
<jsp:useBean id="sessionBean" scope="session"
class="de.gauss.vip.portalmanager.SessionBean" />
<%
// retrieve request parameter
String user = request.getParameter("user");
String pwd = request.getParameter("pwd");
if (!sessionBean.isLoggedIn(request) && user == null && pwd == null) {
%>
<form action="{VIPURL}" method="post">
  Name: <input type="text" name="user"><br>
  Password: <input type="password" name="pwd"><br>
  <input type="submit">
</form>
<%
} else if (user != null && pwd != null)
  {
     sessionBean.checkLogin(request, user, pwd);
%>
<jsp:forward page="list.jsp" />
```

```
<%
  }
%>
```

We recommend that you use the JSP tag `<jsp:forward>` cautiously, as this function is only available if no data has been returned to the browser yet. Alternately, you can use the following JavaScript command to force forwarding in the browser.

```
<script language="JavaScript">
     location.href="list.jsp";
</script>
```

Displaying the content of Enterprise Server items (`show.jsp`)

For displaying the content of a Enterprise Server item, you can use the methods `hasContent` and `getContent` from the `LivelinkObject` interface. The node ID of the document to display is passed as a parameter to the JSP page. Based on the MIME type associated with the item, the system diverts the returned output stream.

```
<jsp:useBean id="llObjBean" scope="session"
class="de.gauss.vip.portalmanager.LivelinkObjectBean" />
<%
// initialize bean
llObjBean.init(request);
// Getting request parameter and instantiating Enterprise Server item
String nodeStr = request.getParameter("nodeId");
if (nodeStr != null) {
  int nodeId = Integer.parseInt(nodeStr);
  LivelinkObject llobj = llObjBean.get(new LivelinkId(nodeId));
  // if item is accessible and has a content show the content
  if (llobj!=null && llobj.hasContent()) {
    // retrieve mime type information
      StringValue mime = (StringValue)llobj.getAttribute
      (LivelinkDocument.META_MIMETYPE);
      //reset response stream and set mime type and status
      response.reset();
      if (mime != null)
        response.setHeader("Content-Type", mime.getString());
      response.setStatus(javax.servlet.http.HttpServletResponse.SC_OK);
       // copying content to response stream
       BufferedOutputStream sos = null;
       try {
            sos = new BufferedOutputStream(response.getOutputStream());
            llobj.getContent(sos);
         } catch(Exception e) {
             if (sos!=null)
                 sos.close();
      }
   }
}
%>
```

You can use the `show.jsp` page for displaying any Enterprise Server document. Before the `show.jsp` page is executed, no data must be written to the `OutputStream` of the `HttpServletResponse`. For this reason, no template must be assigned to this JSP page. You also have to omit the normal header and body tags.

3.4.2 Implementing an Enterprise Server browser

This application example extends the previous example by displaying a recursive and personalized folder structure. It also provides a function for adding items in the Enterprise Server folder.

Scenario

The training department of your company manages all training materials in *Livelink ECM - Enterprise Server*. These documents are organized in a folder structure. You want to provide personalized access to these folders on the website. Also, you want to enable the Training staff to add new documents in the folders via the website.

1. The example implements a navigation for the Enterprise Server folder structure in an Explorer-like style. The documents within the current folder are displayed in a list (`browser.jsp`).

   Clicking the document title displays the content of the document (see "Displaying the content of Enterprise Server items (show.jsp)" on page 64).

2. On the `browser.jsp` page, the users can click a link referring to the `form.jsp` form in order to add documents to the current folder (`create.jsp`).

Navigating recursive Enterprise Server folder structures (`browser.jsp`)

The JSP page consists of two parts: One part displays the folder structure including a navigation, the other part displays a list of the documents in the current folder (see the following section). You can use a table, for instance, to place the two parts on the JSP page.

The JSP page receives the current Enterprise Server folder in the request parameter `navNodeId`. First, the page retrieves the current folder's parent folder and generates a link to this parent folder. In this way, the users can navigate the folder structure. The link calls the JSP page again passing the node ID of the corresponding Enterprise Server item in a parameter. The topmost folder, the Enterprise Workspace item, does not have a parent folder. Thus, no link is generated here. After this, links for the subordinate folders of the current item are generated into the JSP page.

```
...
// determine node id
int navNodeId = 0;
String navNodeIdStr = request.getParameter("navNodeId");
if (navNodeIdStr != null) navNodeId =Integer.parseInt(navNodeIdStr);
if (navNodeId == 0) navNodeId = 2000;
// map storing all non-folder items, used later for the list
RepositoryMap childrenMap = new RepositoryMap();
// retrieve the item and check whether the given item exists
LivelinkObject llobjNav = llObjBean.get(new LivelinkId(navNodeId));
if (llobjNav != null) {
  // The navigation is not empty. First, print a ".." for the
  // parent, if the parent exists.
```

```
  LivelinkId parentId = llobjNav.getParentLivelinkId();
  if (parentId != null) {
    // Print ".." to link to the parent folder. This will call
    //this JSP again, but with the node id of the parent.
%>
<b><a href="{VIPURL}?navNodeId=<%= parentId.getNodeId() %>"> </a></b>
<%
  } // if
  // Iterate the children, print their titles if they are folders
  List lNav = llobjNav.getChildrenIds();
  for (int i=0; i<lNav.size(); i++) {
    // get child item
    LivelinkId tId = (LivelinkId)lNav.get(i);
    LivelinkObject tObj = llObjBean.get(tId);
    // child exists and is a folder; create a link calling this
    // JSP with the according node id
    if (tObj != null && tObj.getCatalogMode() != LivelinkObject.HIDDEN)
    {
      if (tObj.getObjectType().getSubType()== LivelinkObjectType.SUBTYPE_FOLDER) {
%>
<b><a href="{VIPURL}?navNodeId=<%=tempId.getNodeId() %>"> <%= title %></a></b>
<%
      } else {
```

The `childrenMap` created in this process will be used for displaying the Enterprise Server items, which are not of type `folder`, in a list (see the following section).

```
        // add element to the children map used in this page
        childrenMap.putValue (temp, tempObj.getAsRepositoryEntry());
        }
      }
    } // for
  } // if
%>
```

Displaying documents from a Enterprise Server folder (`browser.jsp`)

The second part of the JSP page displays a list of the documents which are contained in the Enterprise Server folder. The documents are sorted by name in the list. Clicking a document name opens a new browser window showing the content of the document (see "Displaying the content of Enterprise Server items (show.jsp)" on page 64).

The JSP page also offers a login method. After the user has logged in successfully, a link for adding items is shown.

JavaScript methods are used to open the browser window. The comment /*VIPURL*/ causes the value which follows the comment to be treated as a WCM-managed link. In this way, you can use WCM-managed URLs in scripting code (JSP, JavaScript).

```
...
<script language="JavaScript">
function openUploadWin() {
  var uploadURL = /*VIPURL*/"form.jsp?uploadNodeId=<%= navNodeId %>";
  window.open( uploadURL ,"name","width=650,height=400,left=200,top=150");
}
function openLoginWin() {
  window.open(/*VIPURL*/"login.jsp","name","width=650,height=400,left=200,top=150");
}
```

```
</script>
```

The document list is displayed as a table and contains six metadata items for each Enterprise Server item. You can easily modify the appearance of the list to suit your requirements.

The `isLoggedIn` method from the `SessionBean` class of the Portal Manager API checks whether the user is logged in to the system.

```
<table width="100%">
<tr>
  <td colspan="6" align="right">
<% // provide link depending on login status of the current session
if (SessionBean.isLoggedIn(request)) { %>
<a href="javascript:openUploadWin()">Add document></a>
<% } else { %>
    <a href="javascript:openLoginWin()">login</a>
<% } %>
  </td>
</tr>
<tr>
  <td>Type</td><td>Title</td><td>Comment</td>
  <td>User</td><td>Created</td><td>Modified</td>
</tr>
```

Sorting within a `RepositoryMap` is very flexible. Sorting always considers the attribute type. Thus, you can sort the entries by date values in ascending or descending order. The `RepositoryMap` can be also be sorted by several attributes. For more information, refer to the Javadoc of the `RepositoryMap` class.

```
<% // show all collected children, see above, sorted by name
RepositoryIterator iter = childrenMap.sort(LivelinkObject.NAME);
while (iter.hasNext()) {
  RepositoryEnty entry = iter.nextEntry();
  // retrieve some metadata of the current children
  LivelinkId llid = (LivelinkId)entry.getValue(LivelinkObject.META_LLID);
  LivelinkObjectType type = (LivelinkObjectType)entry.getValue
  (LivelinkObject.META_OBJECTTYPE);
  StringValue title = (StringValue)entry.getValue(LivelinkObject.META_NAME);
  StringValue comment = (StringValue)entry.getValue(LivelinkObject.META_COMMENT);
  LivelinkUser user = (LivelinkUser)entry.getValue(LivelinkObject.META_USERID);
  DateValue create = (DateValue)entry.getValue(LivelinkObject.META_CREATEDATE);
  DateValue modified = (DateValue)entry.getValue(LivelinkObject. META_MODIFYDATE);
  // generate a URL depending on objecttype
  String url = null;
  if (type.getSubType() == LivelinkObjectType. SUBTYPE_DOCUMENT)
    url = /* VIPURL */"show.jsp?nodeId=" + llid.getNodeId();
%>
```

All `Value` classes of the Portal Manager API provide a `format` method for formatting the values of the class according to a locale and a format description. In the following example, the date is formatted according to the JSP page's locale and the `short` format.

```
<tr>
  <td><%= type.format() %></td>
<% if (url != null) { %>
  <td><a href="<%= url %>" target="content"><%= title.format() %></a></td>
<% } else { %>
  <td><%= title %></td>
<% } %>
```

```
  <td><%= comment.format(); %></td>
  <td><%= user.getName() %></td>
  <td><%= create.format(null, "short") %></td>
  <td><%= modified.format(null, "short") %></td>
</tr>
<%
}
%>
</table>
```

`LivelinkObject` is used to retrieve the icon that is associated with the item. The URL used for accessing the icon can be composed with the following code:

```
String imgUrl = "{VIPDEPLOYMENT_URL}/" + livelinkObj.getImageUrl()
```

Displaying a form for adding a document (`form.jsp`)

The following form can be provided for entering the information required for adding a Enterprise Server document. The form contains input fields for the title, the comment, and for selecting a file. The node ID, which is passed on as a parameter, identifies the folder to which the document will be added. The `create.jsp` page that is called by `form.jsp` creates the document.

```
...
String uploadNodeId = request.getParameter("uploadNodeId");
%>
<form name="form" action="create.jsp" method="post" enctype="multipart/form-data" />
  <input type="hidden" name="returl" value="browser.jsp" %>">
  <table name="table" border="0" style="width:400px;" align="center">
  <tr><td>Title:</td>
    <td><input type="text" name="title" style="width:100%"></td></tr>
    <tr><td>Comment:</td>
      <td><input type="text" name="comment"></td></tr>
    <tr><td>File:</td>
      <td><input type="file" name="fileinput"></td></tr>
<%
int uId = Integer.parseInt(uploadNodeId);
LivelinkObject llObj = llObjectBean.get(new LivelinkId(uId));
if (llObj != null) {
%>
  <tr><td>Folder</td>
    <td><%= llObj.getName() %>
      <input type="hidden" name="filetopic" value="<%= uploadNodeId %>">
    </td></tr>
<%
}
%>
<tr>
  <td colspan="2" align="center"><input type="submit"  value="Create"> 
    <input type="button" value="Close" onClick="javascript:window.close()"></td>
</tr></table></form>
...
```

Adding the document (`create.jsp`)

The `create.jsp` page adds the Enterprise Server document to the folder. The page extracts all required parameters from the request object and adds the corresponding Enterprise Server document. The `ParseMultiFormData` class, which is part of the Portal Manager API, is used for extracting the data.

```
...
OutputStream outS = null; InputStream inS = null;
LivelinkObject llobj = null;
try {
  //ParseMultipartFormData is used to analyze the request of the
  // field "input file".
  ParseMultipartFormData parseMFD = new ParseMultipartFormData( request );
  // Get the form data
  String returl = parseMFD.getParameterValues("returl")[0];
  String title = parseMFD.getParameterValues("title")[0];
  String comment = parseMFD.getParameterValues("comment")[0];
  String[] topicStr = parseMFD.getParameterValues("filetopic")[0];
  int folderId = Integer.parseInt(topicStr);
  // The content type is analyzed: Extract the file name with
  // parseMFD, use java.io.File to get its name (without path and
  // suffix)
  File file = new File(parseMFD.getParameterValues("fileinput")[0];);
  String fileName = file.getName();
  // determine parent id
  LivelinkId parent = new LivelinkId(folderId);
```

The WCM Java API provides functions for retrieving information about WCM servers and their configuration. Of course you can use the WCM Java API in conjunction with the Portal Manager API. In this example, the temporary directory of the installation is retrieved in order to store the file passed to the request.

```
  // copy uploaded file to temp directory of current WCM server
  String dirName = VipRuntime.getCurrentServer().getInstallDirectory() +
  File.separator + VipRuntime.getCurrentServer().getTempDirectory();
  // creating tempfile in tempdir
  file = new File(dirName, fileName);
  // copy stream to file
  inS = parseMFD.getFileContent(uploadParam , 0);
  outS = new BufferedOutputStream(new FileOutputStream(file));
  de.gauss.io.StreamConnector streamCon = new de.gauss.io.StreamConnector(inS, outS);
  streamCon.copyAndClose();
  // creating Enterprise Server item
  llobj = llObjectBean.createDocument(parent, title, comment, file);
  file.delete();
}
catch {Exception e) {
  if (inS != null) inS.close();
  if (ourS != null) outS.close();
}
// if item could be created
if (llobj != null) {
%>
<script language="JavaScript">
location.href = '<%= returl %>?navNodeId=<%= llobj.getLivelinkId().getNodeId() %>';
</script>
<% } else { %>
Error creating page<br />
<a href="#" onClick="javascript:history.back()">back</a>
<%
}
%>
```

3.4.3 Integrating an Enterprise Server channel in a website

In *Livelink ECM - Enterprise Server*, you can add and manage *News*. News are grouped to form a *Channel*. The Portal Manager API provides functions for

accessing these special Enterprise Server items. You can create, read, and delete news and channels.

Channels

A channel is a special type of a Enterprise Server folder. For this reason, the `LivelinkChannel` interface is derived from the `LivelinkFolder` interface. An instance of type `LivelinkChannel` contains a list of `LivelinkNews` objects. Two methods are available for retrieving news:

- `getActiveNews` returns a sorted list of `LivelinkID` instances. The list contains only those IDs whose news have not expired yet. The most current news item is on top of the list.
- `getNews` returns all – i.e. also expired – news items in an unsorted list of `LivelinkID` instances.

News

In order to retrieve information on a `LivelinkNews` object, you can use the methods `getHeadline`, `getStory`, `getUser`, `getImageId`, etc. from the `LivelinkNews` interface. The `getAttachments` method returns a list of attachments belonging to a news item.

The Javadoc contains a complete list of methods.

Use the `createChannel` and `createNews` methods from the `LivelinkObjectBean` to create new channels and news directly in the connected Enterprise Server system.

Scenario

The Public Relations department of your company wants to publish press releases in the website. You want to display summaries of the current news in a teaser list as well as the full text of the news items.

Controlling the page's appearance (`show_channel.jsp`)

The page's appearance is defined by the `show_channel.jsp` page. The display mode of the JSP page is controlled by means of call parameters. The teaser list is displayed if no special node ID is passed to the JSP page.

```
...
<%
// retrieving node ids from the current item and from the request
int nodeId = {VIPLIVELINKID format="nodeid"};
String currentNodeId = request.getParameter("nodeId");
// if no node id is passed, show the list
if (currentNodeId == null) {
  // show list
  ...
} else {
  // show news
  ...
}
...
```

Displaying the teaser list (`show_channel.jsp`)

The teaser list displays all current news sorted by `Valid from` date on the JSP page. Name, date, and comment are shown in a table.

```
...
<h1>{VIPTITLE}</h1>
<table border="0" align="center" width="100%" cellpadding="0" cellspacing="0">
<%
// show all active news from the related channel item
LivelinkChannel llChannel = (LivelinkChannel)llObjBean.get(new LivelinkId(nodeId));
List l = llChannel.getActiveNews();
// iterate children
for (int i=0; i<l.size(); i++) {
  // retrieving news and extract metadata to display
  LivelinkId tempNewsId = (LivelinkId)l.get(i);
  LivelinkNews tempNews = (LivelinkNews)llObjBean.get(tempNewsId);
  String comment = tempNews.getComment();
  DateValue dateValue = new DateValue(tempNews.getDateEffective());
%>
<tr><td><a href="{VIPURL}?nodeId=<%= tempNewsId.getNodeId() %>">
  <%= tempNews.getName() %></a></td>
  <td align="right"><%= dateValue.format(null, "medium") %></td></tr>
<tr><td colspan="2" style="text-align:justify;"><%= comment %></td></tr>
<tr><td colspan="2"><a href="{VIPURL}?nodeId=<%= tempNewsId.getNodeId() %>">
    See our news</a></td></tr>
<% } %>
</table>
...
```

Displaying single news items (`show_channel.jsp`)

A single news item is displayed on a JSP page together with all attributes provided by *Livelink ECM - Enterprise Server*. The icons and attachments of news are displayed by means of the JSP page `show.jsp` described above (see "Displaying the content of Enterprise Server items (show.jsp)" on page 64).

```
...
// retrieve news instance given through the request parameter
int nId = Integer.parseInt(currentNodeId);
LivelinkNews llCurrent = (LivelinkNews)llObjBean.get(new LivelinkId(nId));
// extracting metadata for display
String story = llCurrent.getStory();
// to format the news content, replace newlines with HTML tags.
story = de.gauss.util.StringOperator.replace(story, "\n", "<br />");
String headline = llCurrent.getHeadline();
LivelinkId imgId = llCurrent.getImageId();
String imgAlt = llCurrent.getImageAlt();
LivelinkUser user = llCurrent.getUser();
// show current entry
%>
<h1><%= llCurrent.getName() %></h1>
<h2><%= headline %></h2>
<table width="100%">
<tr><td width="80%" style="text-align:justify;"><%= story %></td>
<% // if an image is assigned to this news, show image
if (imgId!=null) {
%>
  <td width="20%" valign="top"><img src="show.jsp?nodeId=<%= imgId.getNodeId() %>"
  alt="<%= imgAlt %>" /></td>
<% } %>
</tr></table><table>
<% // show all attachements to this news instance
```

```
List a = llCurrent.getAttachments();
for (int i=0; i<a.size(); i++) {
  LivelinkId aId = (LivelinkId)a.get(i);
  LivelinkObject aObj = llObjBean.get(aId);
  if (aObj!=null) {
  String attImgUrl = ""{VIPDEPLOYMENT_URL}/" + aObj.getImageUrl();
%>
<tr><td><img src="<%= attImgUrl %>" title="<%= aObj.getTypeName() %>" /></td>
  <td width="100%"><a href="show.jsp?nodeId=
  <%= aObj.getLivelinkId().getNodeId() %>"
  target="livelink_content"><%= aObj.getName() %></a></td>
  <td><%= aObj.getContentSize() %></td></tr>
<% }
} %>
</table>
...
```

The procedure for adding news or channels in *Livelink ECM - Enterprise Server* corresponds to adding documents (see “Adding the document (create.jsp)” on page 68). You write a form for entering the required information and create a JSP page which interprets the form data and adds the news items or channels via the `LivelinkObjectBean`. The interface for adding channels is `createChannel(parentId, title, comment, imageId)`; the interface for adding news is `createNews(parentId, title, comment, imageId, headline, story, effective, expired)`.

3.4.4 Integrating Enterprise Server discussions in a website

Discussions belong to the frequently used Enterprise Server features. Enterprise Server discussions allow users to work together collaboratively to resolve issues and problems they encounter while working on projects. Thanks to the Portal Manager API, this Enterprise Server feature can also be used in a website.

Livelink ECM - Enterprise Server makes a distinction between the actual discussion item and the entries contained in the discussion item. The entries consist of *Topics* and *Replies* to the topics. The API provides methods for creating new topics and replies.

In this way, the Portal Manager API enables you to set up interactive discussion forums and to use the WCM functionality to apply your corporate design to the discussion.

Enterprise Server discussions in websites can go well beyond the simple display of the discussions. You can also use the Portal Manager API functions to create *Frequently Asked Questions (FAQs)* from these discussions.

Scenario: Integrating discussions in a website

The company staff uses discussions to exchange information on general topics. These discussion forums are managed in *Livelink ECM - Enterprise Server*. You want to publish some of these discussions in the intranet. The staff members shall be able to take part in the discussions via the intranet.

1. All discussions from a specific Enterprise Server area are shown (`find.jsp`). The `search` method of the `LivelinkObjectBean` is used for this purpose.
2. When the user selects a discussion, all topics of this discussion are displayed in a list (`topic.jsp`).
3. When the user selects a topic, the replies to this topic are shown hierarchically (`reply.jsp`). Additionally, the contents of the topic or reply is shown.
4. Buttons for adding new topics/replies are integrated in the topic and reply JSP page respectively (`form.jsp`). The `create.jsp` page creates these topics and replies.

The functions described here can also be implemented with fewer JSP pages (you will find an example for this in the LiveStart website). To make the application examples more comprehensible, the LiveStart code is not shown here.

Showing all discussions of a Enterprise Server area (`find.jsp`)

The JSP page lists all available discussions which the logged-in user is allowed to view. The `LivelinkObjectBean` is used to find the discussions. Then, the application iterates through the search results.

```
...
<table>
<%
int llFilterId = {VIPLIVELINKID format="nodeid"};
// define filter
String filter = "(OTSubType : "+LivelinkObjectType.SUBTYPE_DISCUSSION+")";
if (llFilterId != 0)
  filter += " AND (OTLocation : "+llFilterId+")";
// Search for all discussions and iterate through the result
RepositoryIterator iter = llObjBean.search(filter, true);
while (iter.hasNext()) {
  // getting discussion item
  LivelinkId temp = (LivelinkId)iter.nextKey();
  LivelinkObject tempObj = llObjBean.get(temp);
  // if you have access to the item, display the discussion
  if (tempObj != null) {
    // display node
    String navImgUrl = "{VIPDEPLOYMENT_URL}/" + tempObj.getImageUrl();
    String title = tempObj.getName();
%>
<tr><td valign="top"><img src="<%= navImgUrl %>"title="discussion" /></td>
  <td class="nav-topic"><a href="topic.jsp?discussionId=
  <%= temp.getNodeId() %>"><%= title %></a></td></tr>
<%
  }
}
%>
</table>
...
```

Displaying all topics of a selected discussion (`topic.jsp`)

This page lists all topics of the selected Enterprise Server discussion sorted by date. Below the topic list, a button for adding new topics is added to the JSP page.

```
...
<table>
<%
String dId = request.getParameter("discussionId");
int discId = Integer.parseInt(dId);
LivelinkDiscussion llDiscussion =
(LivelinkDiscussion)llObjBean.get(new LivelinkId(discId));
if (llDiscussion != null && llDiscussion.hasChildren()) {
  // get all topics from the discussion
  List l = llDiscussion.getTopics();
  for (int i=0; i<l.size(); i++) {
    LivelinkId tId = (LivelinkId)l.get(i);
    LivelinkTopic tObj = (LivelinkTopic)llObjBean.get(tId);
    String param = "discussionId=" + dId +"&topicId=" tId.getNodeId() +
    "&nodeId=" tId.getNodeId();
<%
<tr><td><a href="reply.jsp?<%= param %>"><%= tObj.getName() %></td>
  <td><%= tObj.getContent() %></td></tr>
  }
}
%>
</table>
<input type="button" name="Add Topic"
onClick="location.href='form.jsp?discussionId=<%= dId %>'" />
...
```

Displaying a topic with all replies (`reply.jsp`)

The JSP page displays the selected topic and lists all replies to this topic in a hierarchical structure. Below the hierarchical structure, a button for adding a reply is written to the page. The JSP page is called with the following parameters: the node IDs of the discussion, of the topic, and of the currently selected entry.

The `generateOut` method generates the hierarchical structure. The method traverses the structure of the passed `LivelinkDiscussionEntry` instance and generates a link for each element. Each element is indented according to its level in the hierarchy.

```
...
<%!
/** Generate an entry for the tree. Will be called recursively. **/
static String generateOut(LivelinkObjectBean llObjectBean,
  LivelinkDiscussionEntry llObj, String param, int depth) {
  // get required data for the given item
  int width = depth*15; // 15 px per level indention
  LivelinkId llId = llObj.getLivelinkId();
  LivelinkUser user = llObj.getUser();
  DateValue date = (DateValue)llObj.getAttribute(LivelinkObject.META_CREATEDATE);
  String title = llObj.getName() + " - " + user.getName() + " -
  " + date.format(null, "short");
  String ret = "<span width='" + width + "'> </span><a href='{VIPURL}?"
  + i.param + "&nodeId=" + llId.getNodeId() + "'>" + title + </a><br />";
  // iterate through all replies and call this method.
  List l = llObj.getReplies();
  for (int i=0; i<l.size(); i++) {
    LivelinkId id = (LivelinkId)l.get(i);
    LivelinkDiscussionEntry obj = (LivelinkDiscussionEntry)llObjectBean.get(id);
  if (obj != null) ret +=generateOut (llObjectBean, obj, param, depth + 1);
  }
  return ret;
} %>
```

The request parameters `discussionId`, `topicId`, and `nodeId` are used as parameters for the JSP page. `topicId` identifies the topic to be displayed. This topic also serves as the root element for the hierarchical structure. The `nodeId` is the currently selected discussion entry which is to be displayed. The `discussionId` is only required for further processing.

```
<%
String dId = request.getParameter("discussionId");
String tId = request.getParameter("topicId");
String nId = request.getParameter("nodeId");
String param = "discussionId=" + dId + "&topicId=" + tId;
int topicId = Integer.parseInt(tId);
LivelinkTopic llTopic = (LivelinkTopic)llObjBean.get(new LivelinkId(topicId));
if (llTopic != null) {
  LivelinkId nodeId = new LivelinkId(Integer.parseInt(nId));
  LivelinkDiscussionEntry entry = (LivelinkDiscussionEntry)llObjectBean.get(nodeId);
  // display the selected discussion entry, retrieve, manipulate
  // content, replace newline characters with line breaks.
  String content = entry.getContent();
  if (content.length()==0) content = " ";
  content = de.gauss.util.StringOperator.replace(content, "\n", "<br />");
  LivelinkUser user = llCurrent.getUser();
  DateValue date = (DateValue)entry.getAttribute(LivelinkObject.META_CREATEDATE);
%>
<h2><%= llCurrent.getName() %></h2>
<h3><%= user.getFirstName() %> <%= user.getLastName() %> (<%= user.getName() %>)</h3>
  <p>created: <%= date.format(null, "medium") %></p>
  <p><%= content %></p>
  <hr />
```

A recursive call of the `generateOut` method generates the complete hierarchical structure. The `topicId` serves as the root element for the display. Below the hierarchical structure, a button for adding a reply is written to the JSP page.

```
<% // generate a tree for the current topic
  out.println(generateOut(llObjBean, llTopic, param, 0);
}
// generate param to add a reply to the selected node
param += "&nodeId=" + nId;
%>
<input type="button" name="Add Reply" onClick="location.href='form.jsp?
<%= param%>" />
...
```

Displaying a form for adding a topic or a reply (`form.jsp`)

In this form, users can enter the information required for adding a topic or a reply. The form contains input fields for title and content. The node IDs of the discussion and a discussion entry are passed as parameters to the form. If no node ID for a discussion entry is passed, a new topic is created within the discussion. If a node ID is passed, a reply to the passed ID is created. The `create.jsp` page that is called by `form.jsp` creates the topic or reply.

```
// retrieve and check request parameter
String dId = request.getParameter("discussionId");
String tId = request.getParameter("topicId");
String nId = request.getParameter("nodeId");
// get discussion entry
LivelinkId discId = new LivelinkId(Integer.parseInt(dId));
LivelinkObject discussion = llObjBean.get(discId);
if (discussion != null) {
```

```
String title = null;
int currentType = 0;
LivelinkDiscussionEntry parent = null;
// if the current node id is not set, a topic will be created,
// otherwise a reply
if (nId == null) {
  title = "Post a New Topic";
  currentType = LivelinkObjectType.SUBTYPE_TOPIC;
} else {
  // get the current Livelink item
  title = "Post a new Reply";
  currentType = LivelinkObjectType.SUBTYPE_REPLY;
}
%>
```

The form calls the `create.jsp` page and passes the input fields for title and contents as well as the required node IDs and the item type (topic or reply) in hidden attributes.

```
<h1><%= title %></h1>
<form name="CreateItem"  action="create.jsp" method="post">
  <input type="hidden" value="<%= currentType %>" name="objectType">
  <input type="hidden" value="<%= dId %>" name="discussionId">
  <input type="hidden" value="<%= tId %>" name="topicId">
  <table cellSpacing="0" cellPadding="2" width="100%" border="0">
    <tr><td>Subject:</td>
      <td><input maxLength="248" size="60" name="Subject" /></td></tr>
    <tr><td> Comments:</td>
      <td>><textarea name="Comments" rows="12" cols="60"></textarea></td></tr>
    <tr><td align="center" >
      <input type=submit value=Submit><input type=reset value=Reset></td></tr>
    </table>
  </form>
<% } %>
```

Adding a topic or a reply (`create.jsp`)

The last step in this example is to actually add the topic or reply item via the Portal Manager API. Adding these items corresponds to the Enterprise Server browser implementation (see “Adding the document (create.jsp)” on page 68). The request parameters are extracted from the request object. Depending on the passed item type, a topic or a reply is created. After this, the `reply.jsp` page is called which displays the new item.

```
// retrieve request parameter
String comment = request.getParameter("Comments");
String subject = request.getParameter("Subject");
String dId = request.getParameter("discussionId");
String tId = request.getParameter("topicId");
String nId = request.getParameter("nodeId");
String typeStr = request.getParameter("objectType");
if (typeStr!=null && dId!=null) {
  int type = Integer.parseInt(typeStr);
  LivelinkObject newObj = null;
  if (type == LivelinkObjectType.SUBTYPE_TOPIC) {
    LivelinkId parentId = new LivelinkId(Integer.parseInt(dId));
    newObj = llObjBean.createTopic(parentId, subject, null, comment);
  } else {
    LivelinkId parentId = new LivelinkId(Integer.parseInt(nId));
    newObj = llObjBean.createReply(parentId, subject, null,
          comment);
  }
```

```
  LivelinkId newLLId = newObj.getLivelinkId();
  String url = "reply.jsp?discussionId=" + dId +
  "&nodeId=" + newObj.getLivelinkId().getNodeId();
  if (type == LivelinkObjectType.SUBTYPE_TOPIC)
    url += "&topicId=" + newObj.getLivelinkId().getNodeId();
  else
    url += "&topicId=" + tId;
%>
<script language="JavaScript">
location.href="<%= url %>";
</script>
<%
}
```

Scenario: Providing discussion results as a FAQ

You want to use discussions that will not be changed anymore to publish FAQs in your intranet. The discussion topics are used to formulate questions, the corresponding answers are created on the basis of the discussion replies.

This example also shows the interaction between Java on the server side and JavaScript on the client side.

```
<h1>{VIPTITLE}</h1>
<p>Please select a question. The answer(s) will be listed on this page.</p>
<table border="0" width="100%" cellpadding="0" cellspacing="1">
<tr><td bgcolor="white">
<b>Questions:</b><br />
<% // determine the node id of the discussion item to show.
int nId = {VIPLIVELINKID format="nodeid"};
// getting discussion and retrieving questions
LivelinkDiscussion llDisc = (LivelinkDiscussion)llObjBean.get(new LivelinkId(nId));
// getting topics from the current discussion
List l = llDisc.getTopics();
StringBuffer str = new StringBuffer();
for (int i=0; i<l.size(); i++) {
  // examine topic and generate question
  LivelinkId tId = (LivelinkId)l.get(i);
  LivelinkDiscussionEntry tObj = (LivelinkDiscussionEntry)llObjBean.get(tId);
  if (tObj != null) {
    String qContent = tObj.getContent();
%>
```

For each question, a `<div>` tag is written on the page that can be identified by its ID. The tag registers an `EventListener` that calls a JavaScript function when an element is clicked. This function switches the answer area on the client (see last code sample in this section). After this, an `answers` JavaScript array is generated which contains all answers and is used by the JavaScript method `showAnswer`. The array is embedded in the page (see last code sample in this section).

```
<div id="<%= tId.getNodeId() %>" onClick="showAnswer(this)"><%=  qContent %></div>
<%    // adding all replies to the answer array
  List ans = tObj.getReplies();
  str.append("answers[\"" + tId.getNodeId() + "\"] = \"");
  for (int j=0; j<ans.size(); j++) {
    // retrieving reply
    LivelinkId tReplyId = (LivelinkId)ans.get(j);
    LivelinkDiscussionEntry tReply =
    (LivelinkDiscussionEntry)llObjBean.get(tReplyId);
    if (tReply != null) {
      String con = tReply.getName() + "</b><br />";
      con += tReply.getContent();
```

```
      con = de.gauss.util.StringOperator.replace(con,"\n", "<br />");
      str.append("<b>A: "+ con + <br />);
      }
    }
    str.append("\";");
  }
}
%>
</td></tr></table>
<div id="question" style="display: none; visibility: hidden;"> </div>
<div id="answer" style="display: none; visibility: hidden;"> </div>
```

The last part of the code contains the JavaScript which switches the answers. After the composed array has been written on the page, the function for switching is defined. When the user clicks a question, this function is called. First, the DOM elements of the HTML page, which must be replaced, are retrieved and set to visible. After this, the node IDs of the question and the associated answer are retrieved based on the selected element. A DOM manipulation is performed to exchange the information on the page.

```
<script language="JavaScript">
<%= str.toString() %>
/** array with answer to given questions, will be initialized during page creation */
var answers = new Array();
/** Shows the answer to the given question. */
function showAnswer(inItem) {
  var question = document.getElementById("question");
  var answerTable = document.getElementById("answer_table");
  var answer = document.getElementById("answer");
  if (answer && answerTable && question) {
    question.style.display = "block";
    question.style.visibility = "visible";
    answer.style.display = "block";
    answer.style.visibility = "visible";
    var a = answers[inItem.id];
    if (a == null || a.length == 0)
      a = "Not answered yet!";
    question.firstChild.nodeValue = "Q: " + inItem.firstChild.nodeValue;
    answer.innerHTML = a;
  }
}
</script>
```

3.4.5 Polling on the website

In *Livelink ECM - Enterprise Server*, you can take *Polls*. The Portal Manager API enables you to use these polls in a website.

You create the poll as usual in *Livelink ECM - Enterprise Server*, i.e. you define the questions and alternative answers by means of the default Enterprise Server functions. The Portal Manager API provides methods for retrieving these definitions. Also, users can take part in the poll (i.e. vote) and view the poll results.

A Enterprise Server poll consists of one or more questions with predefined answers. There are two types of questions:

- question for which the users can choose exactly one of the predefined answers

  In an HTML form, radio buttons are used for the answers.

- questions for which the users can choose as many answers as they like

  In an HTML form, check boxes are used for the answers.

The conditions for voting in a website poll correspond to the conditions in *Livelink ECM - Enterprise Server*:

- Users must log in before they can vote.
- Each user can only vote once.

Scenario

The staff of your company is to take part in a vote concerning “Safety on the job”. You want to make the poll available in the intranet. The staff members shall be able to vote via the intranet.

Procedure

1. The input form `form.jsp` provides functions for voting in a poll which already exists in *Livelink ECM - Enterprise Server*.
2. Voting is performed on the `vote.jsp` page.
3. The `result.jsp` page displays the poll results.

Displaying a form for an Enterprise Server poll (`form.jsp`)

The form must distinguish two cases:

- The user has not voted yet and can still do so.
- The user has voted already and can view the poll results.

The following example assumes that the user is already logged in to the system (see “User Login (login.jsp)” on page 63). The `canVote(cid)` method makes the distinction between the two cases. The method checks whether the user has voted already and whether voting has not been completed yet.

```
<% // determine ContextId of the current user
ContextId cid = SessionBean.getCurrentContextId(request);
// load LivelinkPoll item (llId points to a LivelinkPoll item)
LivelinkPoll poll = (LivelinkPoll)livelinkObjectBean.get(llId);
if (poll != null) {
  // user has the right to see and therefore vote the poll item
%>
<h1><%= poll.getName() %></h1>
<h2><%= poll.getComment() %></h2><hr />
<% // Check whether the user can vote
  if (!poll.canVote(cid)) {
    // user already voted or poll has been finished
%>
<h2>You already voted in this poll or the poll is finished already. You can
<a href="result.jsp?llid=<%=llId.getNodeId()%>">view the poll results</a>.</h2>
<%
  } else {
    // show poll instructions and metadata
%>
```

```
<h2>Instructions: <%=poll.getInstructions()%></h2>
```

The questions and answers of a poll must be displayed in the correct order, as the system only checks whether a predefined answer has been selected or not when evaluating the votes. The form only transfers the selected form elements. A corresponding index is embedded into the form elements in order to identify the assigned questions and answers on the `vote.jsp` page.

```
<form method="POST" action="vote.jsp">
  <input name="llid" type="hidden" value="<%=llId.getNodeId()%>">
  <table>
<%    int questionIndex = 0;
  for (Iterator qiter = poll.getQuestions().iterator(); qiter.hasNext();
  questionIndex++) {
    int choiceIndex = 0;
    Question question = (Question)qiter.next();
%><tr><td colspan="2"><%=question.getQuestion()%></td></tr><%
  // decide to use radio button or check box controls
  boolean radio = question instanceof AlternativesQuestion;
  List choices = question.getChoices();
  // show the choices
  for(Iterator citer = choices.iterator(); citer.hasNext(); choiceIndex++) {
%><tr><td align="center"> </td>
  <td><input name="<%=("Q"+questionIndex)%>"
  type="<%=(radio?"radio":"checkbox") %>
  value="<%=("C"+choiceIndex)%>" /><%=(String)citer.next()%></td></tr>
<%       } %>
<tr><td colspan="2"> </td></tr>
<%   } %>
  </table>
<% // if comments are allowed add an input element for the comment
  if(poll.isCommentAllowed()) {
%><textarea name="comment" cols="80" rows="5"></textarea>
<%    } %>
<input type="submit" value="Vote"> <input type="reset" value="Reset">
</form>
```

Voting (`vote.jsp`)

Voting itself is performed on the `vote.jsp` page. The JSP page receives the answers to the questions as request parameters. The questions are identified by means of the parameter names and set accordingly in the poll.

```
<% // determine ContextId of the current user
ContextId cid = SessionBean.getCurrentContextId(request);
// extract form data from request
ParseFormEncoded pfe = new ParseFormEncoded(request);
// instantiate LivelinkPoll instance.
LivelinkId llId = new LivelinkId(Integer.parseInt(pfe.getParameterValue("llid", 0)));
LivelinkPoll poll = (LivelinkPoll)livelinkObjectBean.get(llId);
String comment = pfe.getParameterValue("comment", 0);
if(comment.length() < 1) comment = null;
for (Enumeration enum = pfe.getParameterNames(); enum.hasMoreElements(); ) {
  String parName = (String)enum.nextElement();
  if(parName.startsWith("Q")) {
    int questionIndex = Integer.parseInt(parName.substring(1));
    // get all selected values for this
    String questionString[] parValue = pfe.getParameterValues(parName);
    for (int idx = 0; idx < parValue.length; idx++) {
      int choiceIndex = Integer.parseInt(parValue[idx].substring(1));
      // select answer to the question. Type of the question must not be considered
      poll.select(questionIndex, choiceIndex);
    }
```

```
  }
}
// send data to the server
poll.vote(cid, comment);
%>
<script language="JavaScript">
  location.href = results.jsp?llid=<%=llId.getNodeId()%>";
</script>
```

Displaying the poll results (`result.jsp`)

The current poll results can only be viewed if the user has voted already and if preview is explicitly allowed for the poll.

```
<% // determine ContextId of the current user
ContextId cid = SessionBean.getCurrentContextId(request);
// instantiate LivelinkPoll object
LivelinkId llid = new LivelinkId(Integer.parseInt(request.getParameter("llid")));
LivelinkPoll poll = (LivelinkPoll)lob.get(llId);
if (poll != null) {
// show name and comment
%>
<h1><%= poll.getName() %></h1>
<h2><%= poll.getComment() %></h2><hr />
<% // load poll results
  LivelinkPollResults results = poll.getResults(cid);
  int votingsTotal = results.getTotalNumberOfVotings();
  DecimalFormat decfPerc = new DecimalFormat("#0.00");
%>
<h2>Total number of participants: <%=votingsTotal%></h2>
<h2>Instructions: <%=poll.getInstructions()%></h2>
<table>
<% // iterate through the questions
  for (Iterator qiter = poll.getQuestions().iterator(),
  riter = results.getResultsList().iterator(); qiter.hasNext();  ) {
    Question question = (Question)qiter.next();
    List choices = question.getChoices();
    List votes = (List)riter.next();
%><tr><td colspan"4"><%=question.getQuestion()%></td></tr>
```

The questions and the corresponding answers of a poll are complemented by statistical information and illustrated by graphics.

```
<% for (Iterator citer = choices.iterator(),
viter = votes.iterator(); citer.hasNext();  ) {
  // determine statistical data
  Integer numVotes = (Integer)viter.next();
  double percent = (numVotes.doubleValue() * 100.0) / (double)votingsTotal;
  int pix = numVotes.intValue();
%>
<tr><td align="right"><%= numVotes %>x</td>
  <td><%=(String)citer.next()%></td>
  <td align="right"><%= decfPerc.format(percent) %>%</td>
  <td bgcolor="<%=(pix==votingsTotal?"#20DD10":"#E0E0E0")%>">
    <table width="100"><tr>
<%
    if(pix > 0 && pix < votingsTotal) {
    pix = ((numVotes.intValue() * 100) + votingsTotal / 2) / votingsTotal;
%>
    <td bgcolor="#20DD10" width="<%=pix%>"> </td>
<%       } %>
    <td> </td></tr></table></td></tr>
<%    }
  } %>
```

```
</table>
```

Comments registered for the poll are listed at the end of the poll analysis.

```
<p>Total number of comments: <%= results.getNumberOfComments() %>
< 0.000000or (iter = results.getComments(0, -1); iter.hasNext(); ) {
%>
<p><%= iter.next() %>
<% } %>
```

Chapter 4

Livelink ECM - Enterprise Server contents in the Content client

Note: For detailed information on working with the Content client, refer to the *Livelink WCM Server - Content client User Manual (WMCC-GGD)*.

Due to the integration of the WCM system with *Livelink ECM - Enterprise Server*, you can add Enterprise Server objects as WCM objects to a WCM-managed website. These WCM objects are called *relators*. They always refer to a certain version of the Enterprise Server object. There are different types of WCM objects for integrating Enterprise Server objects:

- `Enterprise Server relator` for individual Enterprise Server objects
- `Enterprise Server folder relator` for Enterprise Server folders
- `Enterprise Server relator for template`, to save a WCM template as an Enterprise Server object thus making them available for several WCM systems
- `Enterprise Server relator for compound document` for compound documents in *Livelink ECM - Enterprise Server*

Note: To access Enterprise Server objects via the WCM system, the Enterprise Server module `WCM Kernel Integration` is required. This module automatically synchronizes the WCM object when the associated Enterprise Server object changes.

You can directly access relators in the WCM system (e.g. in the Content client). The actual objects, however, are stored in the Enterprise Server database. Relators are treated like normal WCM objects and are subject to staging. The reference management of Livelink WCM Server is also available for relators. Relators for Enterprise Server folders and compound documents have a special feature: as they do not have any content, you cannot check out and check in these relators.

Enterprise Server objects integrated in a website by means of relators are displayed directly in the browser. If files cannot be displayed directly in the browser, e.g. PDF files or Word documents, a "surrogate page" containing a link to the file is generated. Enterprise Server folders and compound documents become WCM topics. As topics have content, an HTML page is generated for each Enterprise Server folder.

In the Navigation area of the Content client, the following icons symbolize relators:

The letters **LL** in the bottom right corner of the object type icon stand for *Livelink ECM - Enterprise Server*. (The figure shows the relator icon for an Excel document).

If the system cannot access the Enterprise Server object referenced by the relator, the relator's icon is marked by a red cross. The reason for this may be that the Enterprise Server object has been deleted or that the connection between the WCM system and the Enterprise Server system has been interrupted.

The following functions are available for relators:

- “Adding relators” on page 84
- “Editing relators” on page 100
- “Deleting relators” on page 110

4.1 Adding relators

Prerequisites for adding relators

- In the WCM system, you have the access rights `Read` and `Create` for the topic to which the relator is to be added.

  If you want to add a new Enterprise Server object together with the relator, you also need the permission `Add Items` for the Enterprise Server folder to which you want to add the object.

- You are assigned the functional area `Enterprise Server`. To check your functional areas, select **Tools** ⇒ **Login info**.
- Your WCM administrator prepared the website, in which you want to add the relator, for using Enterprise Server functionality.

Ways to add relators

There are different ways of adding Enterprise Server objects as WCM objects. You can:

- add an individual, existing Enterprise Server object as a WCM object, see “Adding an Enterprise Server relator” on page 85
- add an existing folder structure or compound object from Enterprise Server as a WCM object, see “Create relator for Enterprise Server folder or compound document” on page 90
- add an Enterprise Server object together with the associated relator, see “Adding relator together with the associated Enterprise Server object” on page 94
- add a template for WCM objects as an Enterprise Server object and then integrate as a relator in the WCM system. This enables you, for example, to use a template

for different WCM systems, see "Add template for WCM objects as an Enterprise Server object" on page 97.

Important

- You cannot use the Content client to add folders and compound documents in *Livelink ECM - Enterprise Server*.
- You should not **manually** add relators and folder relators below a relator for a folder or compound object. The process that synchronizes the WCM system with the Enterprise Server system checks whether all the subordinate objects in the Enterprise Server folder or compound object are represented by relators; manually created relators are deleted.

Note: When adding Enterprise Server relators, the suggested file name for the page, which is generated from the WCM object, is automatically based on the file names of the version of the linked Enterprise Server object. This is marked **Suggested file name** in the metadata via the `version:` entry before the file name. If you would to like to use a fixed file name that is independent of the version of the Enterprise Server object, edit the relator's metadata (**General** tab) and remove the prefix.

4.1.1 Adding an Enterprise Server relator

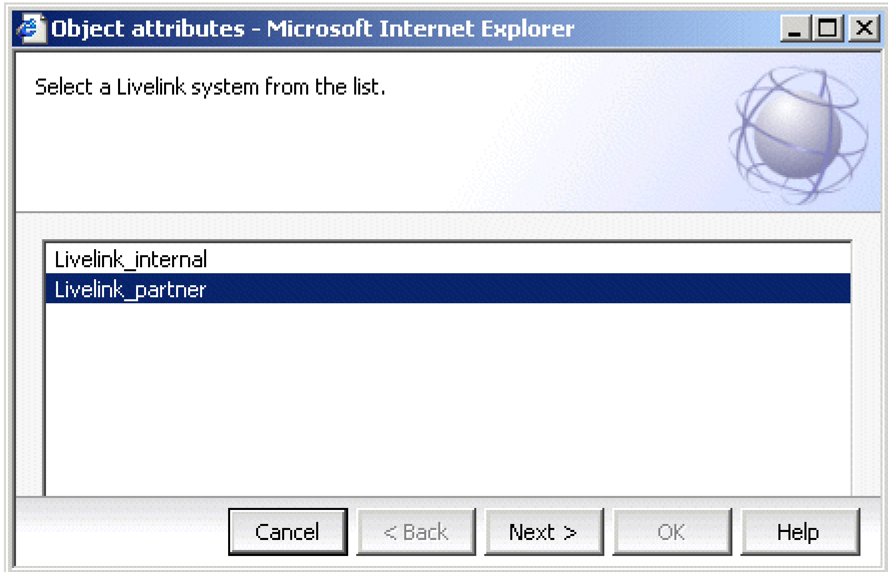
Objective

You want to integrate a single, existing Enterprise Server object in a WCM-managed website. A wizard guides you through the process of adding the relator.

Procedure

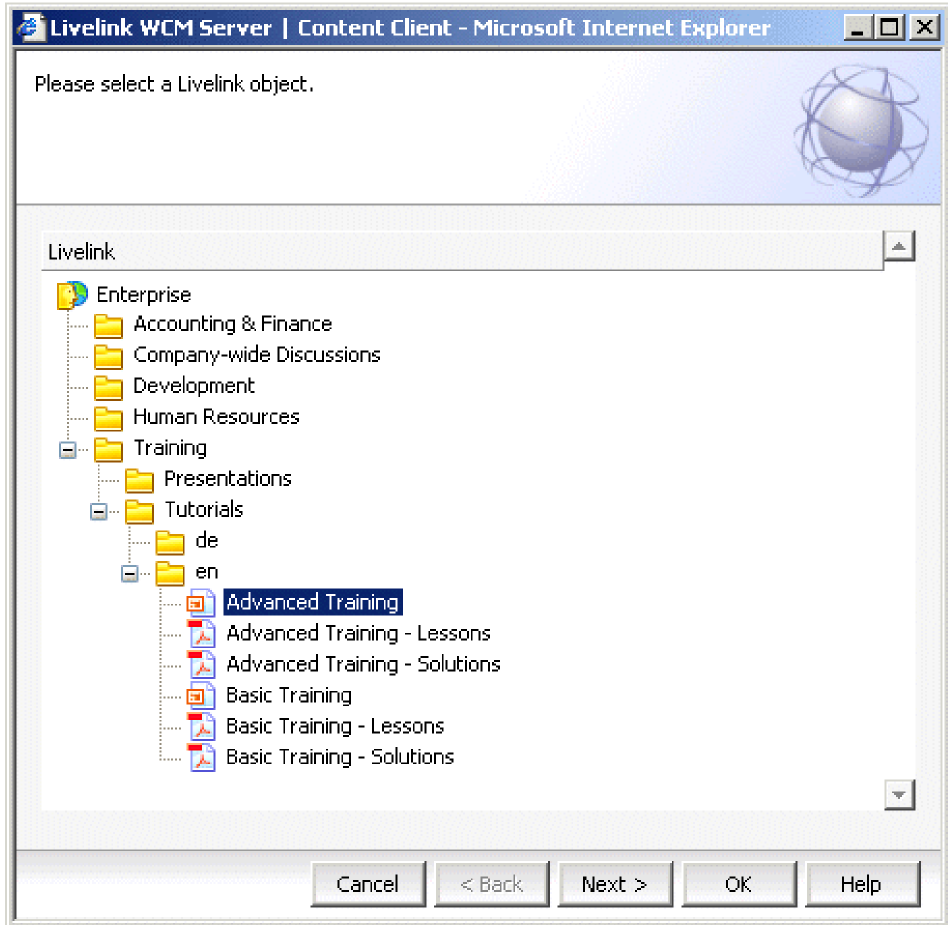
1. Launch the Content client.

   The URL of the Content client is of type
   `http://wcmserver.company.example/cmsclient/index.jsp`
2. Log in to the Content client and select the website that you want to edit.
3. Change to the Edit view of the website. To open this dialog box, choose **Tools** ⇒ **View** ⇒ **Edit view**.
4. In the Navigation area, mark the topic to which you want to add the relator.
5. Select **Object** ⇒ **New** ⇒ **Relator**.
6. If there are several Enterprise Server systems in your company, select in the next dialog box the Enterprise Server system in which the Enterprise Server object you want to integrate is stored.



Click the **Next** button.

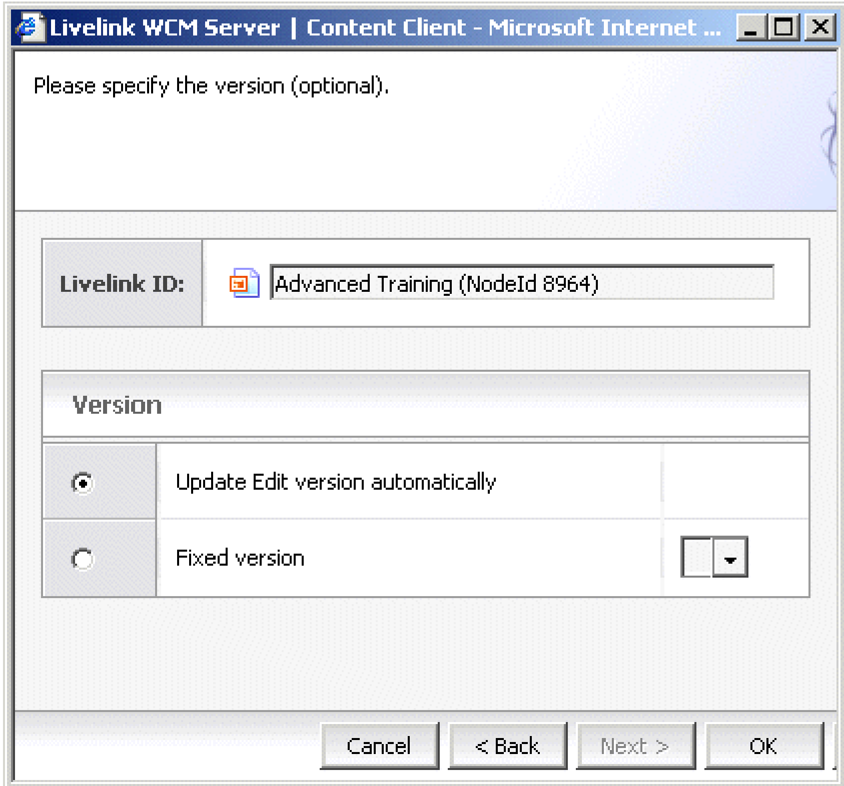
7. Select the Enterprise Server object that is to be added as a relator in the WCM system.



- If you select an Enterprise Server *folder*, all subfolders and documents in this folder are integrated into the WCM system.
- If you select a *compound object*, all respective objects are included in the WCM system.
- If you select a *link*, the Enterprise Server object is displayed on the website to which the link leads.

Click the **Next** button.

8. In the next dialog box, specify how the relator reacts when the underlying Enterprise Server object changes. A copy of the object can also be added in the WCM database.



- **Enterprise Server ID**

  Enterprise Server ID of the selected object. The Enterprise Server ID is composed of the name and the ID of the object in the Enterprise Server system. You cannot change this entry.

- **Save copy in WCM database**

  Select this option to store a copy of the Enterprise Server object in the WCM database. This enables Livelink WCM Server to access the copy during page generation instead of the object directly in the Enterprise Server database. This way, the pages for relators can also be generated should the connection to the Enterprise Server be temporarily interrupted.

- **Update Edit version automatically**

  If you click this radio button, the Edit view of the relator will be automatically changed whenever the object is modified in the Enterprise Server system. For the changes to become visible in the published website, you must submit the changed relator which then must be released by Quality Assurance.

  Notes:

  - If versioning for the Enterprise Server object has been enabled in major and minor versions, the relator is only automatically changed

when the major version of the Enterprise Server object changes. Changes to the minor versions are ignored by Livelink WCM Server.

- A relator can only be updated automatically if its status is either `changed`, `rejected`, `released`, or `delayed release`. If this requirement is not met, use the appropriate staging action to change the relator's status. After this, you can adapt the relator to the modified Enterprise Server object by choosing **Object** ⇒ **Synchronize**.
- Relators based on an Enterprise Server link are changed when the target object of the link is changed or updated.

- **Fixed version**

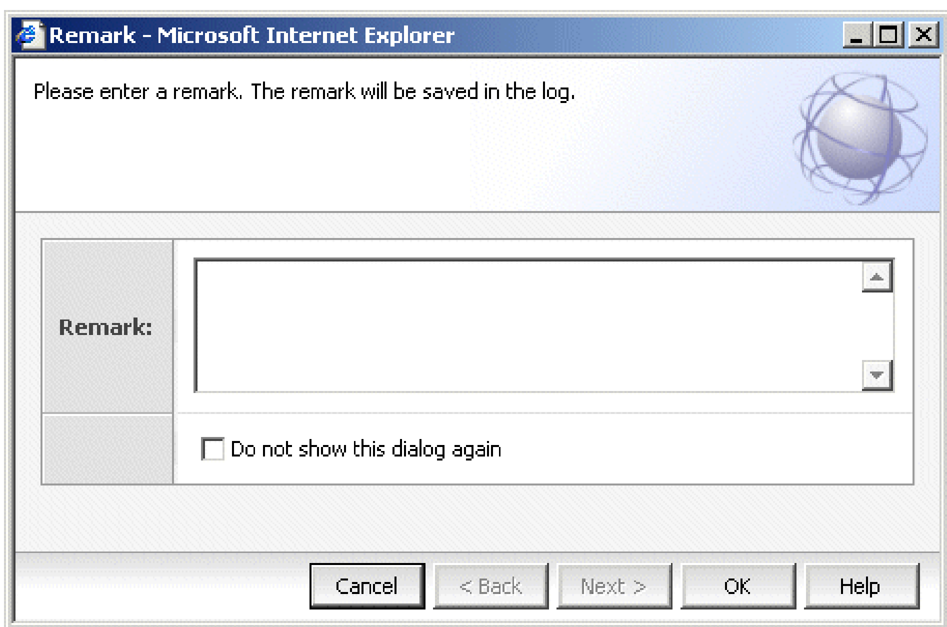
  If you click this radio button, the relator will be based on a certain version of the Enterprise Server object. When the object changes in the Enterprise Server system, the relator remains unchanged. You can, however, update the relator manually via the Enterprise Server metadata dialog box.

- **Version**

  If you clicked the **Fixed version** radio button, select the desired version of the Enterprise Server object from the drop-down list.

Click the **OK** button.

9. In the last dialog box, you may enter information for the relator's log.



Click the **OK** button.

The WCM system creates the relator and shows it in the Navigation area. The relator's status is `changed`.

For the relator to become visible in the published website, you must submit it. After this, the relator must be released by Quality Assurance.

Related Topics:

- "Adding relator together with the associated Enterprise Server object" on page 94
- "Modifying the content of a relator" on page 103
- "Modifying Enterprise Server metadata" on page 104
- "Submitting and releasing relators" on page 100

4.1.2 Create relator for Enterprise Server folder or compound document

Objective

You want to integrate an Enterprise Server folder or compound document including all subfolders and subordinate documents into the WCM system. Each Enterprise Server object is to be represented by a relator in the WCM system. A wizard guides you through this task.

Procedure

1. Launch the Content client.

   The URL of the Content client is of type `http://wcmserver.company.example/cmsclient/index.jsp`

2. Log in to the Content client and select the website that you want to edit.

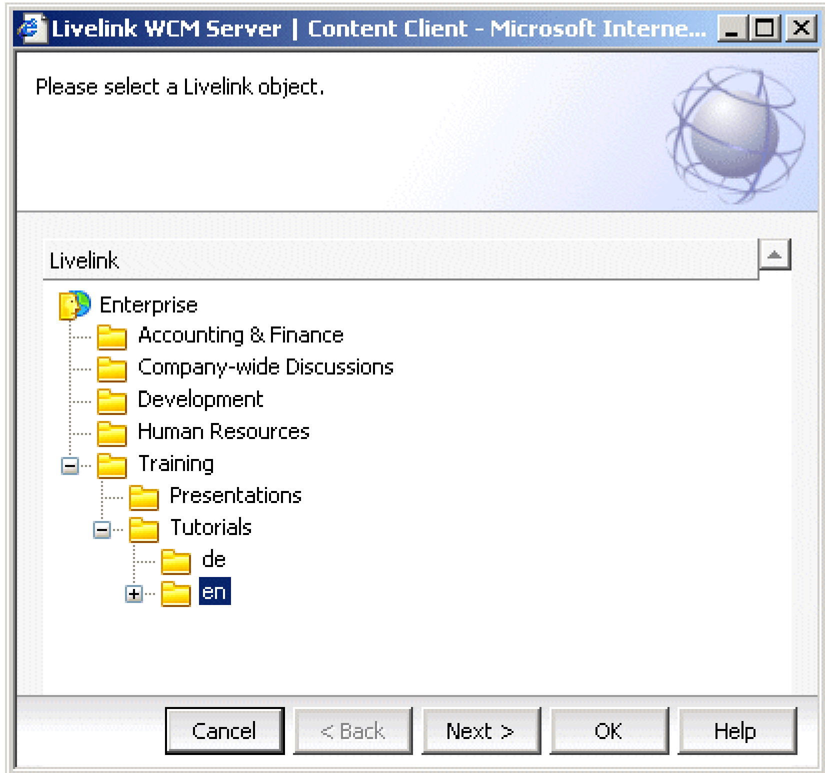
3. Change to the Edit view of the website. To open this dialog box, choose **Tools** ⇒ **View** ⇒ **Edit view**.

4. In the Navigation area, mark the topic in which you want to integrate the Enterprise Server objects.

5. Select **Object** ⇒ **New** ⇒ **Relator**.

6. If there are several Enterprise Server systems in your company, select in the next dialog box the Enterprise Server system in which the Enterprise Server folder you want to integrate is stored.

7. In the next dialog box, select an Enterprise Server folder or compound document. All subfolders and subordinate documents will be integrated in the WCM system.

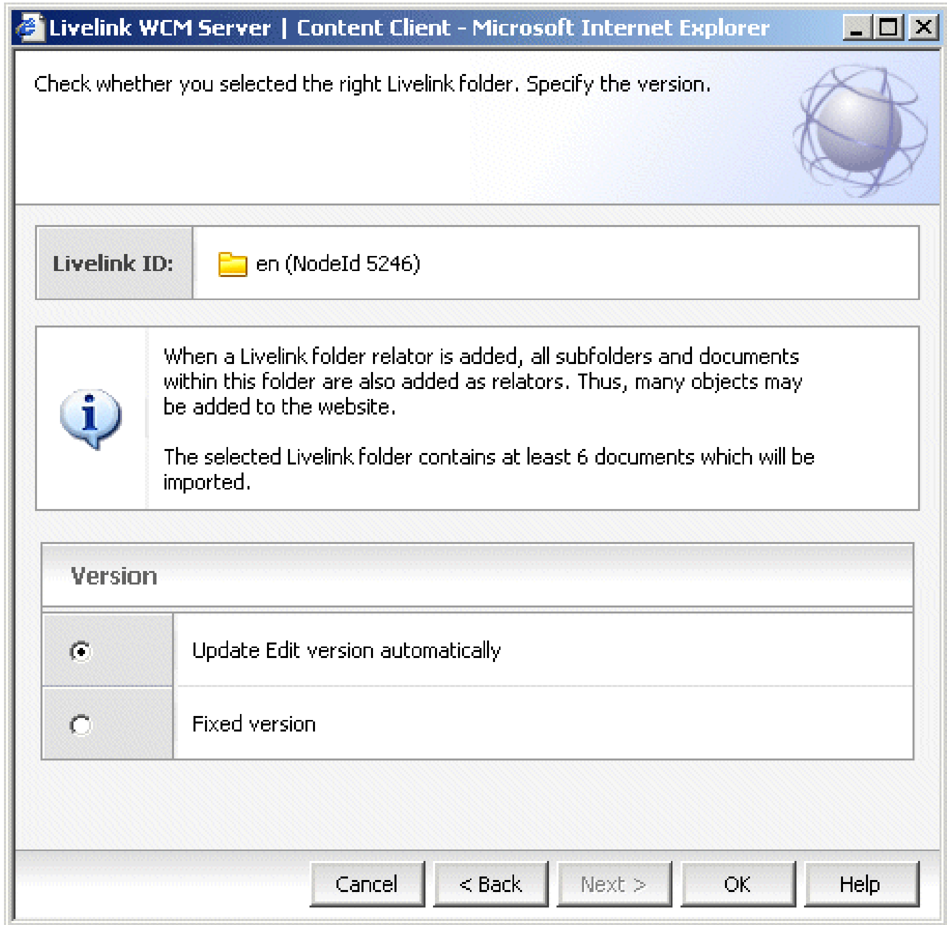


Click the **Next** button.

8. In the next dialog box, specify how the relator reacts when the underlying Enterprise Server folder changes.

Important

For each object in the Enterprise Server folder or compound object, a separate relator is created. The setting that you make here initially applies to all relators. However, you can subsequently change this setting for individual relators (in the Enterprise Server metadata dialog box).



- **Enterprise Server ID:**

  Enterprise Server ID of the selected folder or compound document. The Enterprise Server ID is composed of the name and the ID of the object in the Enterprise Server system. You cannot change this entry.

- **Update Edit version automatically:**

  If you click this radio button, the Edit view of the Enterprise Server relator will be automatically adapted whenever the metadata of the associated Enterprise Server folder or compound document change. If an object is added to the Enterprise Server folder or another document is added to the compound document, a new relator representing this object is automatically created. If an object is removed from the Enterprise Server folder or compound document, the associated relator will be deleted.

  Notes:

  - Livelink WCM Server does not support revisions to compound documents. The current revision is always used.

- If versioning for the Enterprise Server object has been enabled in major and minor versions, the relator is only automatically changed when the major version of the Enterprise Server object changes. Changes to the minor versions are ignored by Livelink WCM Server.
- For the changes to become visible in the published website, you must submit the changed relator which then must be released by Quality Assurance.
- A relator can only be updated automatically if its status is either `changed`, `rejected`, `released`, or `delayed release`. If this requirement is not met, use the appropriate staging action to change the relator's status. After this, you can adapt the relator to the modified Enterprise Server object by choosing **Object** ⇒ **Synchronize**.

- **Fixed version:**

  If you click this radio button, the Enterprise Server folder relator will be based on the current version of the Enterprise Server folder or compound document. When the object's metadata change in the Enterprise Server system, the associated relator remains unchanged. If an object is added to the Enterprise Server folder or a document is added to the compound document, a new relator representing this object is not automatically created. However, the relator for an object will be deleted, if the object is removed from the Enterprise Server folder or compound document.

  You can update the relator manually via the Enterprise Server metadata dialog box.

Click the **OK** button.

9. In the following dialog box, you may enter information for the logs of the individual relators.

   Click the **OK** button.

The WCM system creates the relators and shows them in the Navigation area. Their status is `changed`.

For the relators to become visible in the published website, you must submit them. After this, the relators must be released by Quality Assurance.

Note: Below a relator for an Enterprise Server folder or compound document, you can add further WCM objects. However, if you selected the **Update Edit version automatically** option for the relator, the relator for the Enterprise Server folder or the compound document and **all** subordinate WCM objects are automatically deleted when the reference folder/the document in *Livelink ECM - Enterprise Server* is deleted.

Related Topics:

- “Modifying Enterprise Server metadata” on page 104

- “Modifying the content of a relator” on page 103
- “Submitting and releasing relators” on page 100

4.1.3 Adding relator together with the associated Enterprise Server object

Objective

You want to integrate a relator in the WCM system which refers to a file which does not yet exist as a document in the Enterprise Server system. Together with the relator in the WCM system, you want to add this file as a document in the Enterprise Server. A wizard guides you through this process.

Notes:

- Enterprise Server objects that you add in the Content client together with the relators will **always** be deleted when the associated relator is destroyed.
- You cannot use the Content client to add folders and compound documents in the Enterprise Server system.

Procedure

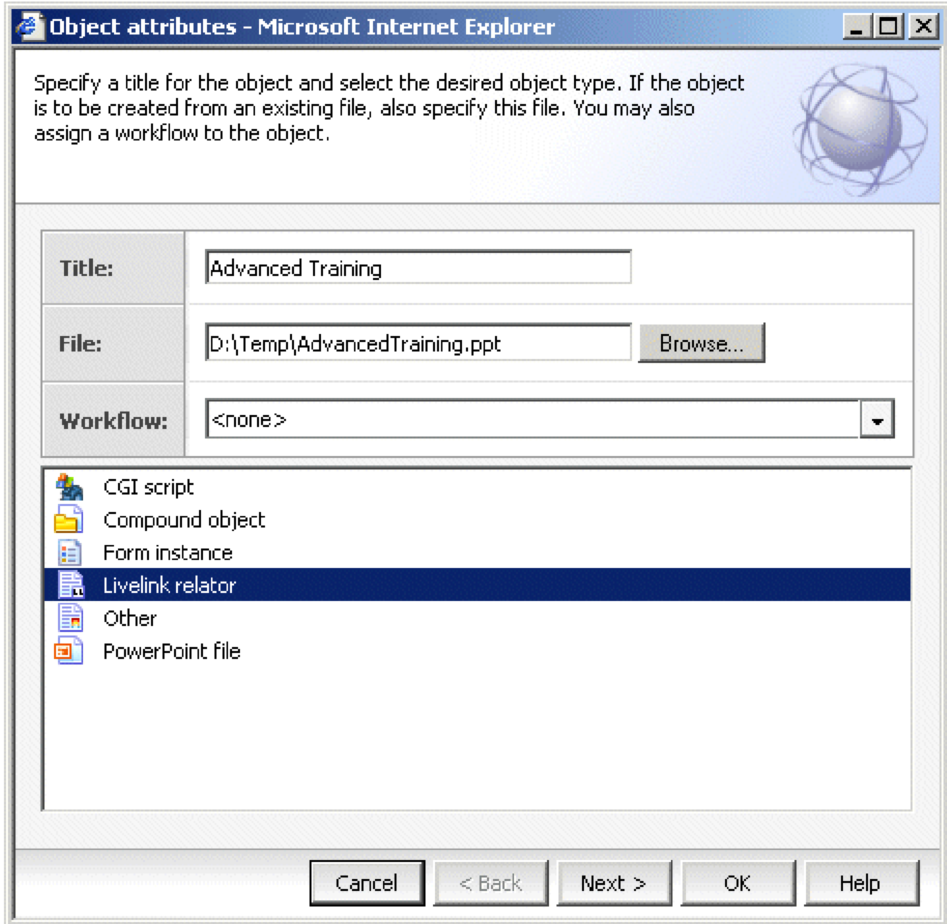
1. Launch the Content client.

   The URL of the Content client is of type
   `http://wcmserver.company.example/cmsclient/index.jsp`

2. Log in to the Content client and select the website that you want to edit.
3. Change to the Edit view of the website. To open this dialog box, choose **Tools** ⇒ **View** ⇒ **Edit view**.
4. In the Navigation area, mark the topic to which you want to add the relator.
5. Choose **Object** ⇒ **New** ⇒ **from object type** or click the appropriate icon.

    Icon for adding an object on the basis of the object type

6. In the first dialog box, you specify the file which is to be added to the Enterprise Server system and the name of the new Enterprise Server object.



- **Title**

  Enter the name for the document in Enterprise Server. The Content client uses this name as the relator's title. The title is used to identify the relator and is displayed both in the header and in the navigation area.

  Entering a title is mandatory.

  Note: Titles must not be more than 255 characters long. Also, you should adapt the length of the title in such a way that the resulting file name meets the requirements of your operating system. Under Windows, the absolute path to a topic and a generated page may not be longer than 240 and 260 characters respectively.

- **File**

  Specify the object to be added to the Enterprise Server system. Click the **Browse** button to select the file.

  Specifying a file is mandatory.

  Note: Please choose only files that have a file extension.

- **Workflow**

  If you want to assign a workflow to the new object, click the desired workflow in the drop-down list.

  For detailed information on the Livelink WCM Server Workflow, refer to Section 8 "Content Workflow" in *Livelink WCM Server - Content client User Manual (WMCC-GGD)*.

- **Object type**

  Select the object type `Enterprise Server relator`.

Click the **Next** button.

7. If there are several Enterprise Server systems in your company, select in the following dialog box the Enterprise Server system to which the document is to be added.

   Click the **Next** button.

8. In the following dialog box, you select the *Livelink ECM - Enterprise Server* folder for the new document.

   Click the **Next** button.

9. In the following dialog box, you may enter information for the relator's log.

   Click the **OK** button.

The WCM system creates the relator and shows it in the Navigation area. The relator's status is `changed`. Also, the document will be stored at the specified location in the Enterprise Server system.

The relator is created with the settings **Update Edit version automatically** and **Delete Enterprise Server object together with relator**. You can change these settings in the Enterprise Server metadata dialog box.

For the relator to become visible in the published website, you must submit it. After this, the relator must be released by Quality Assurance.

Related Topics:

- “Modifying Enterprise Server metadata” on page 104
- “Submitting and releasing relators” on page 100
- “Modifying the content of a relator” on page 103

4.1.4 Add template for WCM objects as an Enterprise Server object

Objective

You want to add a template for WCM objects as an Enterprise Server object to use it as a template in several WCM systems.

Procedure

1. Add a template for WCM objects using an authoring environment of your choice.

   Note: The WCM tag `{VIPCONTENT}` must be used in the file code. Otherwise, Livelink WCM Server does not recognize the file as a template.

2. Save the file in *Livelink ECM - Enterprise Server*. For detailed information on adding objects in *Livelink ECM - Enterprise Server*, refer to the Enterprise Server's online help.

3. Launch the Content client.

   The URL of the Content client is of type `http://wcmserver.company.example/cmsclient/index.jsp`

4. Log in to the Content client and select the website that you want to edit.

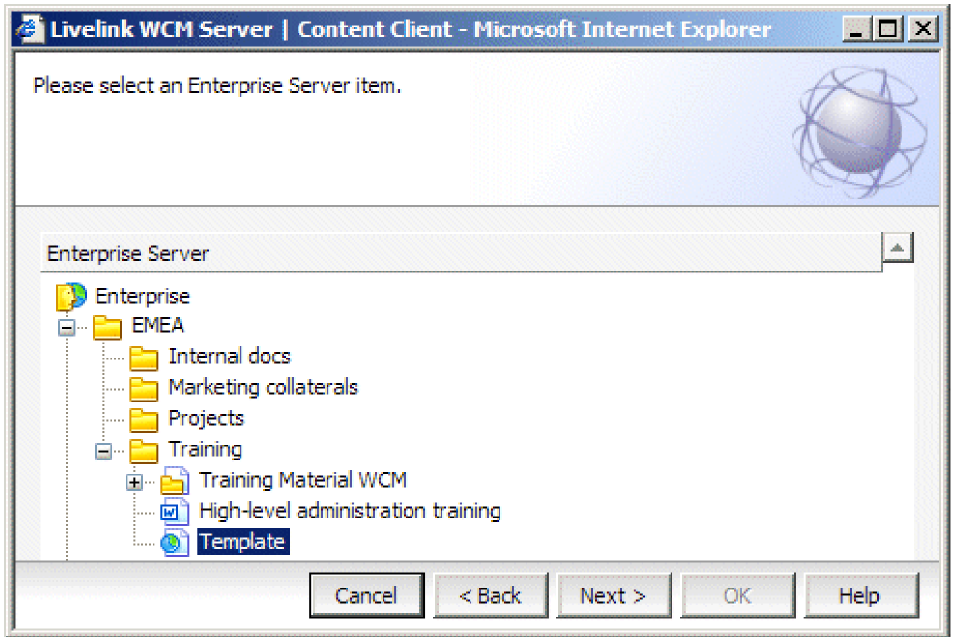
5. Change to the Edit view of the website. To open this dialog box, choose **Tools** ⇒ **View** ⇒ **Edit view**.

6. In the Navigation area, mark the topic to which you want to add the relator.

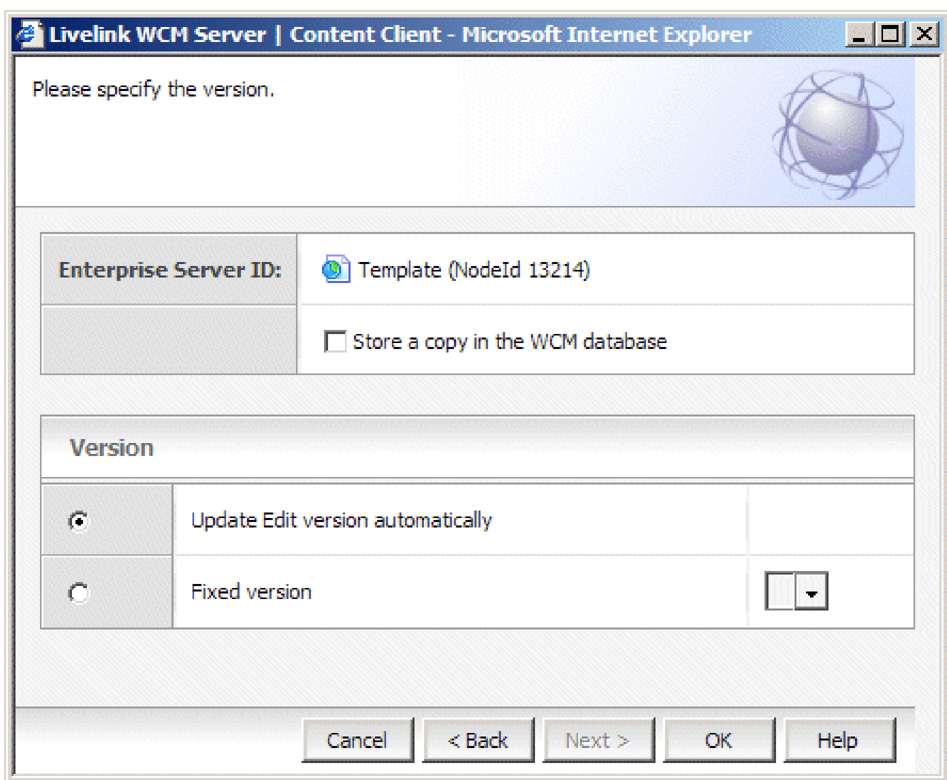
7. Select **Object** ⇒ **New** ⇒ **Relator**.

8. If there are several Enterprise Server systems in your company, select in the next dialog box the Enterprise Server system in which the template file is stored.

9. Select the template that is to be added as relator in the WCM system and click the **Next** button.



10. In the next dialog box, specify how the relator reacts when the template file in Enterprise Server changes. A copy of the object can also be added in the WCM database.



- **Enterprise Server ID**

  Enterprise Server ID of the template. The Enterprise Server ID is composed of the name and the ID of the object in the Enterprise Server system. You cannot change this entry.

- **Save copy in WCM database**

  Select this option to store a copy of the Enterprise Server object in the WCM database. This enables Livelink WCM Server to access the copy during page generation instead of the object directly in the Enterprise Server database. This way, the pages can also be generated should the connection to the Enterprise Server be temporarily interrupted.

- **Update Edit version automatically**

  If you click this radio button, the Edit view of the relator will be automatically changed whenever the template is modified in the Enterprise Server system. For the changes to become visible in the published website, you must submit the changed relator which then must be released by Quality Assurance.

  Notes:

  - Changes to a template that is stored in the Enterprise Server and integrated as a relator in several WCM systems affect all corresponding WCM systems.
  - A relator can only be updated automatically if its status is either `changed`, `rejected`, `released`, or `delayed release`. If this requirement is not met, use the appropriate staging action to change the relator's status. After this, you can adapt the relator to the modified Enterprise Server object by choosing **Object** ⇒ **Synchronize**.

- **Fixed version**

  If you click this radio button, the relator will be based on a certain version of the Enterprise Server object. When the object changes in the Enterprise Server system, the relator remains unchanged. You can, however, update the relator manually via the Enterprise Server metadata dialog box.

- **Version**

  If you clicked the **Fixed version** radio button, select the desired version of the Enterprise Server object from the drop-down list.

Click the **OK** button.

11. In the last dialog box, you may enter information for the relator's log.

    Click the **OK** button.

You can now assign WCM objects to the relator as a template. Note that the object type of the WCM objects must correspond to the type of Enterprise Server object (HTML files as template for WCM objects of type `HTML page` etc.).

Related Topics:

- “Modifying the content of a relator” on page 103
- “Modifying Enterprise Server metadata” on page 104

4.2 Editing relators

Relators do not only enable you to publish Enterprise Server objects on a website. They also make it possible to edit Enterprise Server objects via the Content client.

The following functions are available for editing relators:

- “Submitting and releasing relators” on page 100
- “Modifying the content of a relator” on page 103
- “Modifying Enterprise Server metadata” on page 104
- “Integrating Enterprise Server metadata in a page” on page 106
- “Updating a relator manually” on page 109

4.2.1 Submitting and releasing relators

Changes to relators only become visible in the published website after the relators were submitted and released by Quality Assurance.

- “Finding changed relators” on page 100
- “Submitting relators” on page 102
- “Releasing relators” on page 102

Finding changed relators

You want to find all changed relators which can be submitted to Quality Assurance. This also includes relators that have been updated automatically because the referenced Enterprise Server object was modified. You can use the predefined filter `changed` for finding changed objects.

Prerequisite

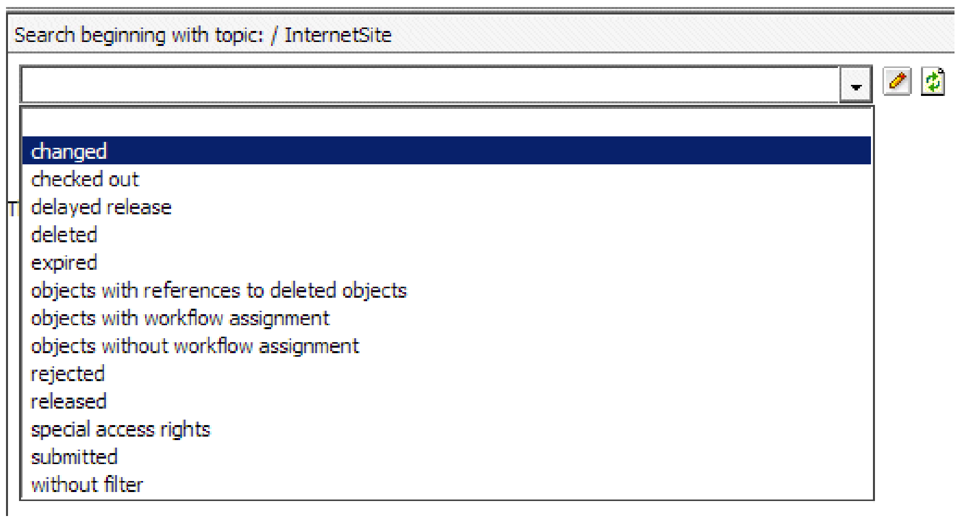
You are assigned the functional area `Filter standard`. To check your functional areas, select **Tools** ⇒ **Login info**.

Procedure

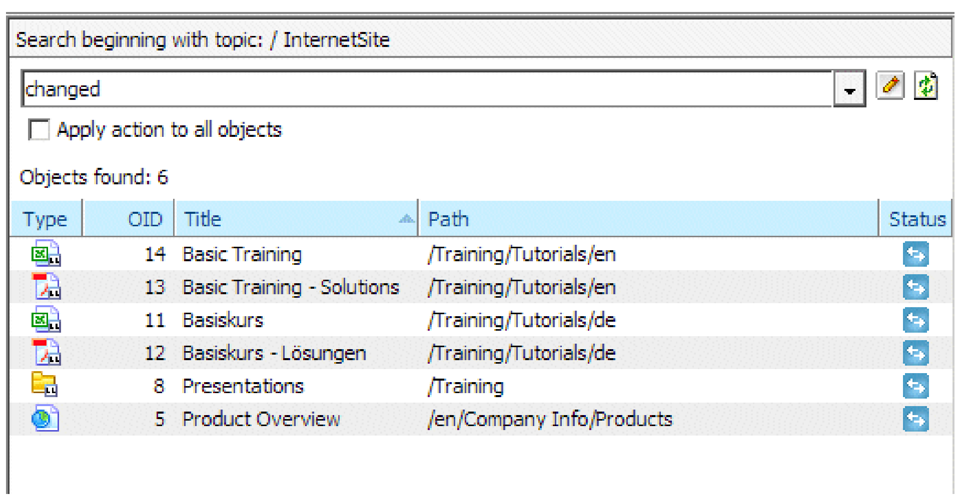
1. Launch the Content client.

The URL of the Content client is of type
`http://wcmserver.company.example/cmsclient/index.jsp`

2. Log in to the Content client and select the website that you want to edit.
3. Change to the Edit view of the website. To open this dialog box, choose **Tools** ⇒ **View** ⇒ **Edit view**.
4. In the Navigation area, mark the topic in which you want to search.
5. Choose **View** ⇒ **Object filter**.
6. Click the `changed` filter in the drop-down list.



The filter hitlist opens automatically. It contains all changed WCM objects, not only relators.



You can select one or more objects in the list in order to edit them.

Submitting relators

You have added a relator, changed an existing relator, or the relator has been updated automatically because the underlying Enterprise Server object was modified. Quality Assurance is to check the relator. That means that you want to *submit* the relator.

Prerequisites

- The relator has the status `changed`, `rejected` or `released`.
- You have the access rights `Read` and `Change object` for the relator.

Procedure

1. Launch the Content client.

   The URL of the Content client is of type
   `http://wcmserver.company.example/cmsclient/index.jsp`
2. Log in to the Content client and select the website that you want to edit.
3. Change to the Edit view of the website. To open this dialog box, choose **Tools** ⇒ **View** ⇒ **Edit view**.
4. In the Navigation area, mark the relator that you want to submit to Quality Assurance.
5. Choose **Object** ⇒ **Submit** or click the appropriate icon.

    Icon for submitting an object

   The object has the status `submitted` and can be checked by Quality Assurance.

Releasing relators

You have completed the quality assurance process for a relator and come to a positive conclusion. You now want to transfer the current version of the relator to the Production view and thus make it available to the public, i.e. you want to *release* the relator.

Prerequisites

- The relator has the status `submitted`.
- You have the access rights `Read` and `Release` for the relator.

Procedure

1. Launch the Content client.

The URL of the Content client is of type
`http://wcmserver.company.example/cmsclient/index.jsp`

2. Log in to the Content client and select the website that you want to edit.
3. Change to the Edit view of the website. To open this dialog box, choose **Tools** ⇒ **View** ⇒ **Edit view**.
4. In the Navigation area, mark the relator that you want to release.
5. Choose **Object** ⇒ **Release** or click the appropriate icon.

 Icon for releasing an object

The changed relator is now visible in the published website.

4.2.2 Modifying the content of a relator

Objective

Relators refer to objects in the Enterprise Server system. You can use the Content client to modify the content of Enterprise Server objects.

Prerequisites

- The relator has the status `changed`, `rejected`, `released`, or `delayed release`.
- The radio button **Update Edit version automatically** is selected for the relator.
- You have the access rights `Read` and `Change object` for the relator.
- You have the permission `Reserve` for the Enterprise Server object.

Procedure

1. Launch the Content client.

   The URL of the Content client is of type
   `http://wcmserver.company.example/cmsclient/index.jsp`
2. Log in to the Content client and select the website that you want to edit.
3. Change to the Edit view of the website. To open this dialog box, choose **Tools** ⇒ **View** ⇒ **Edit view**.
4. In the Navigation area, mark the relator whose associated Enterprise Server object you want to edit.
5. Choose **Edit** ⇒ **Check out**, or click the corresponding icon.

 Icon for checking out an object

The relator is barred for write access by other users; the Enterprise Server object will be marked as reserved in the Enterprise Server system.

Depending on the configuration of the Content client, the content of the Enterprise Server object opens in the integrated HTML editor or in the associated editor program.

6. Edit the Enterprise Server object in the respective editor.
7. Save your changes and close the editor.
8. To return the modified relator to the WCM system and unreserve the Enterprise Server object, choose **Edit** ⇒ **Check in** or click the appropriate icon.

   Icon for checking in an object

   The relator has the status `changed`. A new version is added to the Enterprise Server object.

   For the change to become visible in the published website, you must submit the changed relator which then must be released by Quality Assurance.

Related Topics:

- "Submitting and releasing relators" on page 100

4.2.3 Modifying Enterprise Server metadata

Objective

Each Enterprise Server object has a number of metadata. Thus, each relator has the WCM metadata of the associated Enterprise Server metadata (e.g. Enterprise Server system, Enterprise Server ID). You can view and modify the Enterprise Server metadata of relators in the Enterprise Server metadata dialog box.

You want to edit the Enterprise Server metadata of a relator.

Prerequisites

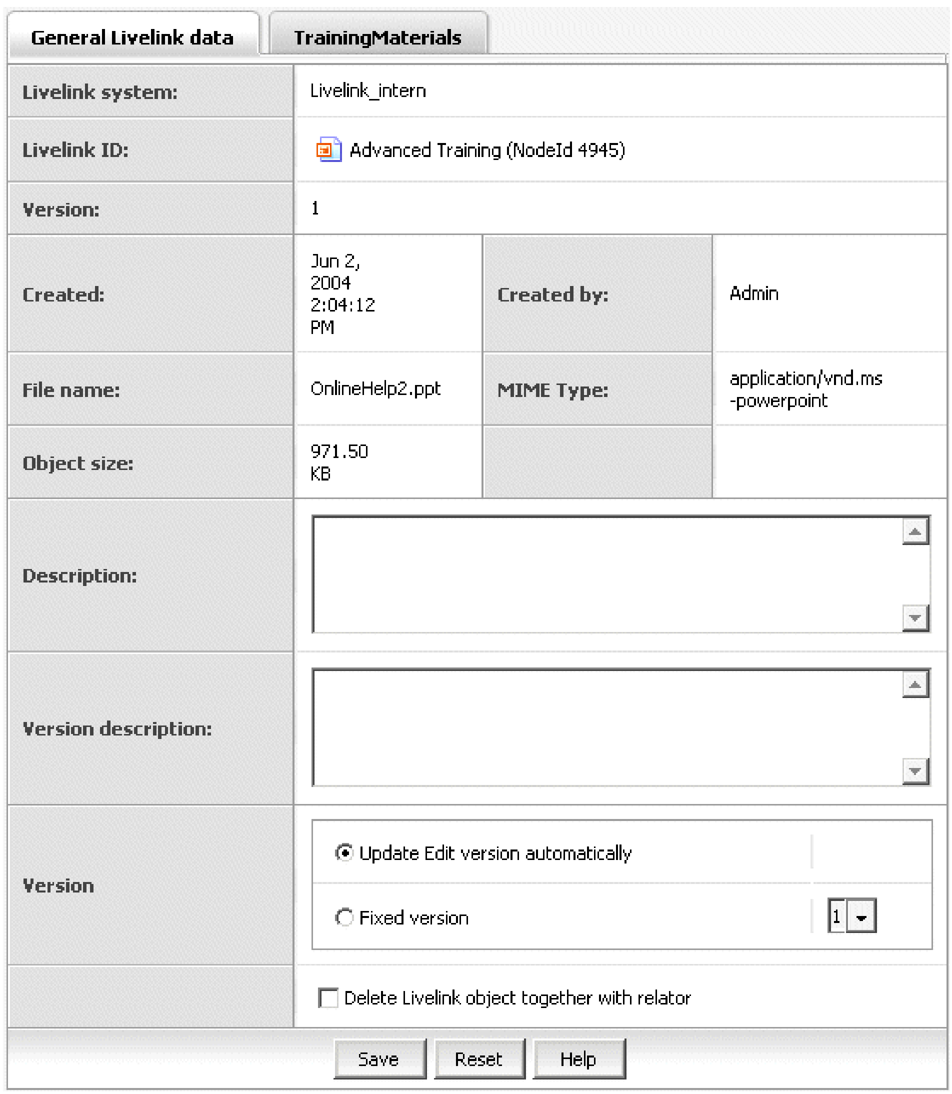
- The relator has the status `changed`, `rejected`, `released`, or `delayed release`.
- You have the access rights `Read` and `Change metadata` for the relator.
- You are assigned the functional area `Enterprise Server`. To check your functional areas, select **Tools** ⇒ **Login info**.
- You have the permission `Modify` for the Enterprise Server object.

Procedure

1. Launch the Content client.

   The URL of the Content client is of type
   `http://wcmserver.company.example/cmsclient/index.jsp`
2. Log in to the Content client and select the website that you want to edit.

3. Change to the Edit view of the website. To open this dialog box, choose **Tools** ⇒ **View** ⇒ **Edit view**.
4. In the Navigation area, mark the relator whose Enterprise Server metadata you want to edit.
5. Choose **View**- ⇒ **Enterprise Server metadata**.



The dialog box provides several tabs for viewing and editing metadata.

- **General Enterprise Server data tab –** Most entries on this tab are controlled by the Enterprise Server system and can only be viewed here.

  You can change the following settings:

- **Description and Version description**

  In these fields, you may enter basic information on the relator and on this special version of the relator.

- **Version tab**

  This is where you determine whether the relator is to be updated automatically when the associated Enterprise Server object changes (**Update Edit version automatically** radio button) or is to reference a specific version of the Enterprise Server object (**Fixed version** radio button).

- **Enterprise Server object to be deleted together with relator**

  Select this check box to destroy the referenced object in *Livelink ECM - Enterprise Server* together with the relator.

- **Save copy in WCM database**

  Select this option to store a copy of the Enterprise Server object in the WCM database. This enables Livelink WCM Server to access the copy during page generation instead of the object directly in the Enterprise Server database. This way, the pages for relators can also be generated should the connection to the Enterprise Server be temporarily interrupted.

- **Tabs for object categories –** For each object category assigned to the object in the Enterprise Server system, a separate tab with the category's name is shown (in the figure **Training Material**). You can modify the Enterprise Server object's attributes on the tabs.

6. Make the desired changes on the tabs.
7. Click the **Save** button.

   The metadata are changed in the Enterprise Server system. The relator now has the status `changed`.

   For the change to become visible in the published website, you must submit the changed relator which then must be released by Quality Assurance.

Related Topics:

- "Submitting and releasing relators" on page 100

4.2.4 Integrating Enterprise Server metadata in a page

Just like WCM metadata, you can integrate Enterprise Server metadata in a template or in the page generated for the object and thus use the metadata in a WCM-managed website. WCM tags are provided for integrating metadata.

Note: For detailed information on WCM tags, refer to Section 15 "Working with WCM tags" in *Livelink WCM Server - Content client User Manual (WMCC-GGD)*.

- "WCM tags for Enterprise Server standard metadata" on page 107
- "WCM tags for user-defined metadata" on page 107

WCM tags for Enterprise Server standard metadata

Table 4-1 provides an overview of the WCM tags for the most common Enterprise Server standard metadata. The file `Livelink_WCM_tags.html` in the directory `<`*`WCM installation directory`*`>\examples\wcmtags\` contains all Enterprise Server-specific WCM tags.

Table 4-1: WCM tags for the most common Enterprise Server metadata

Metadata item	Internal name	WCM tag
Description	`comment`	`{VIPLL attribute="comment"}`
File name	`filename`	`{VIPLL attribute="filename"}`
Created by	`createdby`	`{VIPLL attribute="createdby}`
Created	`createdate`	`{VIPLL attribute="createdate"}`
Modified	`modifydate`	`{VIPLL attribute="modifydate"}`
MIME type	`mimetype`	`{VIPLL attribute="mimetype"}`
Object size (in bytes)	`filedatasize`	`{VIPLL attribute="filedatasize"}`
Node ID	`nodeid`	`{VIPLL attribute="nodeid"}`
Version	`versionnum`	`{VIPLL attribute="versionnum"}`
Version description	`vcomment`	`{VIPLL attribute="vcomment"}`

Related Topics:

- "WCM tags for user-defined metadata" on page 107

WCM tags for user-defined metadata

The WCM tag mechanism is also available for user-defined Enterprise Server metadata (e.g. the attributes of an object category). Use the following pattern to form WCM tags for user-defined attributes:

```
{VIPLL category="<name of the category>" set="<name of the attribute group>
" attribute="<name of the attribute>" set_no="<number>"
item_no="<number>"}
```

- `category`: name of the category containing the attribute
- `set`: name of the set containing the attribute
- `attribute`: name of the attribute for which the WCM tag is created
- `set_no`: position of the set in the list of set values
- `item_no`: position of the attribute value to be shown in the list of attribute values

If the attribute to be shown is not of type `set`, the expression becomes simpler:

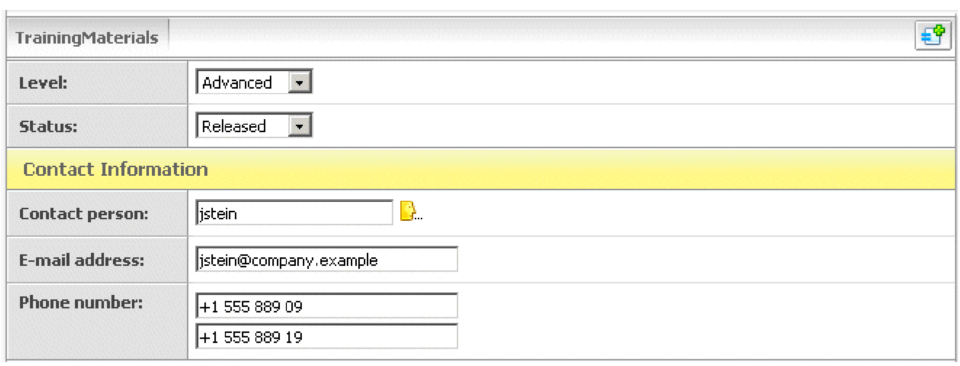
```
{VIPLL category="<name of the category>" attribute="<name of the
attribute>
" item_no="<number>"}
```

Example

For the training materials, you created a category named `Training Materials`. By means of the attributes of this category, you can manage information on the status and the contact person for the materials. The attribute set `Contact Information` of the category contains three attributes in the following order:

1. Contact Person
2. E-mail
3. Phone number

   The attribute `Phone number` may contain two values: in the first position the conventional phone number, in the second position the mobile phone number.



Use the tag

```
{VIPLL category="Trainingsmaterialien" set="Kontaktinformationen"
attribute="Telefonnummer" set_no="1" item_no="2"}
```

to show the mobile phone number of the contact person on the page. In case of the employee `Joshua Stein` who is entered as the contact person, this is the phone number `+1 898 999 333`.

Related Topics:

- "WCM tags for Enterprise Server standard metadata" on page 107

4.2.5 Updating a relator manually

Objective

If you have selected the **Fixed version** radio button for the relator, the relator will **not** be updated automatically when the referenced Enterprise Server object changes. You want to update the relator manually.

Prerequisites

- The relator has the status `changed`, `rejected`, `released`, or `delayed release`.
- The **Fixed version** radio button was selected for the relator.
- You have the access rights `Read` and `Change metadata` for the relator.
- You are assigned the functional area `Enterprise Server`. To check your functional areas, select **Tools** ⇒ **Login info**.

Procedure

1. Launch the Content client.

   The URL of the Content client is of type
   `http://wcmserver.company.example/cmsclient/index.jsp`
2. Log in to the Content client and select the website that you want to edit.
3. Change to the Edit view of the website. To open this dialog box, choose **Tools** ⇒ **View** ⇒ **Edit view**.
4. In the Navigation area, mark the relator that you want to update.
5. Choose **View** ⇒ **Enterprise Server metadata** ⇒ **General Enterprise Server data** tab.
6. In the **Version** drop-down list, click the version of the Enterprise Server object that the relator is to reflect.
7. Click the **Save** button.

   For the change to become visible in the published website, you must submit the changed relator which then must be released by Quality Assurance.

Related Topics:

- "Submitting and releasing relators" on page 100

4.3 Deleting relators

Notes:

- You can delete relators like “normal” WCM objects.

  For detailed information on WCM objects, refer to Section 6.6 "Deleting an Object" in *Livelink WCM Server - Content client User Manual (WMCC-GGD)*.

- **Delete Enterprise Server object together with the relator**: In order to destroy the Enterprise Server object, you require the Enterprise Server permission `Delete`. If you do not have this permission, the relator will be deleted in the WCM system. However, the object in the Enterprise Server system will not be removed.

- **Enterprise Server relators** are always deleted when the referenced objects are deleted in *Livelink ECM - Enterprise Server*. Relators that have the status `submitted` are automatically rejected and deleted afterwards. If a relator has already been released once, it is marked as deleted and must be destroyed manually.

- **Enterprise Server folder relators** for which the **Update Edit version automatically** option is selected, are automatically deleted (including all subordinate objects), when the referenced Enterprise Server folder is deleted. The same applies to relators for compound documents and the associated documents.

  If you want to add further WCM objects below a relator for an Enterprise Server folder or a compound document, you should select the **Fixed version** radio button for the relator. Relators with this settings will not be removed when the referenced Enterprise Server folder is deleted.

Selecting the “Delete Enterprise Server object together with relator” option

In the Enterprise Server metadata dialog box, you can determine that the referenced *Livelink ECM - Enterprise Server* object will be destroyed together with the relator.

Proceed as follows:

1. Launch the Content client.

   The URL of the Content client is of type
   `http://wcmserver.company.example/cmsclient/index.jsp`

2. Log in to the Content client and select the website that you want to edit.

3. Change to the Edit view of the website. To open this dialog box, choose **Tools** ⇒ **View** ⇒ **Edit view**.

4. Open the Enterprise Server metadata dialog box by choosing **View** ⇒ **Enterprise Server metadata**.

5. On the **General Enterprise Server data** tab, select the check box **Delete Enterprise Server object together with relator**.

6. Click the **Save** button.

   For the change to take effect, you must submit the relator which then must be released by Quality Assurance.

Related Topics:

- "Submitting and releasing relators" on page 100

Chapter 5

Using the Enterprise Server search for the WCM system

The Search Server Connector for *Livelink ECM - Enterprise Server* enables you to use the search engine integrated in *Livelink ECM - Enterprise Server* for searching WCM-managed websites. Several scenarios are possible.

- Scenario 1 – Searching website contents

  Livelink ECM - Enterprise Server is able to index contents from websites which are managed by the WCM system. For this purpose, an internal *collection* is added in the WCM system which forms the basis for searching the contents in a WCM-managed website.

- Scenario 2 – Searching Enterprise Server contents

  An existing Enterprise Server slice can be added as an external collection in the WCM system. In this way, you can search Enterprise Server contents in a WCM-managed website.

- Scenario 3 – Searching other document sets

  You can also index documents which are neither managed with *Livelink ECM - Enterprise Server* nor with a WCM system. The external collection created in the indexing process can be searched in a WCM-managed website.

This chapter deals with the following topics:

5.1 Technical concepts of the search-engine integration

Livelink ECM - Enterprise Server is able to index documents from external systems (in this case from the WCM system). The external data source is defined by an XML Activator within the Search Server Connector. This XML Activator comprises the following processes:

1. Process monitoring the directory in which external programs store the documents to be indexed

   The files stored in this directory contain the actual content as well as the metadata of the documents. The most important metadata item is the URL, which is also called OTURN (Open Text Universal Resource Name) in this context.

2. Conversion process

   The XML Activator includes a text converter supporting several file formats, such as DOC and PDF.

3. Indexing process

   The documents converted to text are indexed and can thus be searched.

After converting and indexing have been completed, a new slice is defined on the basis of the data source. This slice contains the data generated during indexing. A search manager is created for processing the search requests.

Data flows during indexing

In order to use the Enterprise Server search in a WCM system, you have to perform several installation and configuration steps (see “Configuring the Enterprise Server search for the WCM system” on page 115). After this, the Enterprise Server search engine regards the WCM-managed websites as external data sources.

Whenever a WCM object changes in one of the collections managed by the Enterprise Server *Search server*, the ContentMinerNotification agent initiates the generation of a command file for the XML Activator. In this way, the XML Activator receives instructions on how to process the changes, e.g. re-index the object or remove the object from the index. The command file is created in a temporary directory and then moved to the directory monitored by the XML Activator.

System architecture

Figure 5-1 illustrates the interaction between the different components.

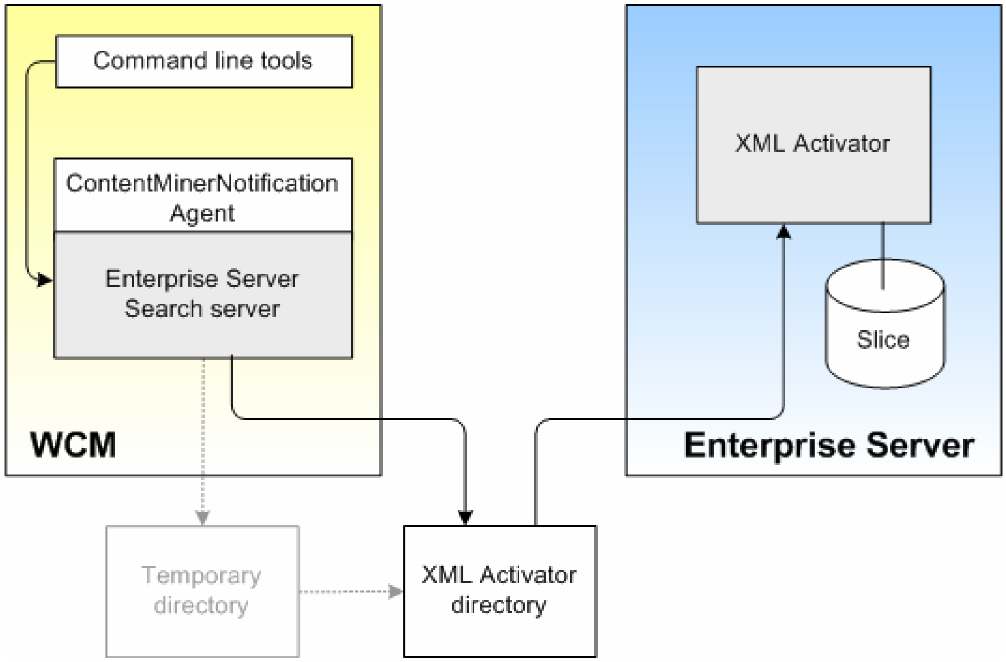


Figure 5-1: Interaction of components in the Enterprise Server search

To make the illustration more comprehensible, only one XML Activator is shown. You can, however, configure several XML Activators. That means there may exist more than one:

- temporary directory
- XML Activator directory
- XML Activator
- slice

The relation between the individual components is always as shown in the illustration.

5.2 Configuring the Enterprise Server search for the WCM system

The procedure for setting up the Enterprise Server search for the WCM system depends on the *Livelink ECM - Enterprise Server* version used in your company.

- "Search based on Livelink ECM - Enterprise Server 9.2.1" on page 116
- "Search based on Livelink ECM - Enterprise Server 9.5.0" on page 128

5.2.1 Search based on *Livelink ECM - Enterprise Server* 9.2.1

Note: *Livelink ECM - Enterprise Server* and Livelink WCM Server use a shared directory for exchanging data. For this reason, both the Enterprise Server system and the WCM server, to which the Search server is assigned, must have write access to this shared directory.

The Enterprise Server search can be used in different scenarios.

Scenario 1 – Searching website contents

Realizing this scenario requires the following steps in *Livelink ECM - Enterprise Server* and in Livelink WCM Server:

1. Livelink WCM Server: Install Enterprise Server Search server (see “Installing Enterprise Server search servers in the WCM system” on page 117).
2. Enterprise Server: Prepare indexing (see “Preparing indexing” on page 119).
3. Enterprise Server: Create XML Activator Producer data flow (see “Creating an XML Activator Producer data flow in Livelink ECM - Enterprise Server” on page 120).
4. Livelink WCM Server: Add collections (see “To add an internal collection for WCM contents to an Enterprise Server Search server:” on page 123).
5. Enterprise Server: Make index regions queryable (see “Making index regions queryable in Livelink WCM Server” on page 126).
6. Enterprise Server: Start the XML Activator process (see “Starting the XML activator process in Livelink WCM Server” on page 126).
7. Enterprise Server: Display index regions (see “Displaying index regions in Livelink ECM - Enterprise Server” on page 127).

Scenario 2 – Searching Enterprise Server contents

Realizing this scenario requires the following steps in Livelink WCM Server:

1. Install Enterprise Server Search server (see “Installing Enterprise Server search servers in the WCM system” on page 117).
2. Add collections (see “To add an external collection for an Enterprise Server slice to an Enterprise Server Search server:” on page 125).

Note: The Enterprise Server module `WCM Kernel Integration` is required to access Enterprise Server items via the WCM system. For information regarding the installation of this module, refer to “Installing the WCM Kernel Integration module” on page 54 .

Scenario 3 – Searching other document sets

Realizing this scenario requires the following steps in *Livelink ECM - Enterprise Server* and Livelink WCM Server:

1. Livelink WCM Server: Install Enterprise Server Search server (see “Installing Enterprise Server search servers in the WCM system” on page 117).
2. Enterprise Server: Prepare indexing (see “Preparing indexing” on page 119).
3. Enterprise Server: Create XML Activator Producer data flow (see “Creating an XML Activator Producer data flow in Livelink ECM - Enterprise Server” on page 120).
4. Livelink WCM Server: Add collections (see “To add an external collection for another document set to an Enterprise Server Search server:” on page 126).
5. Enterprise Server: Start the XML Activator process (see “Starting the XML activator process in Livelink WCM Server” on page 126).

Installing Enterprise Server search servers in the WCM system

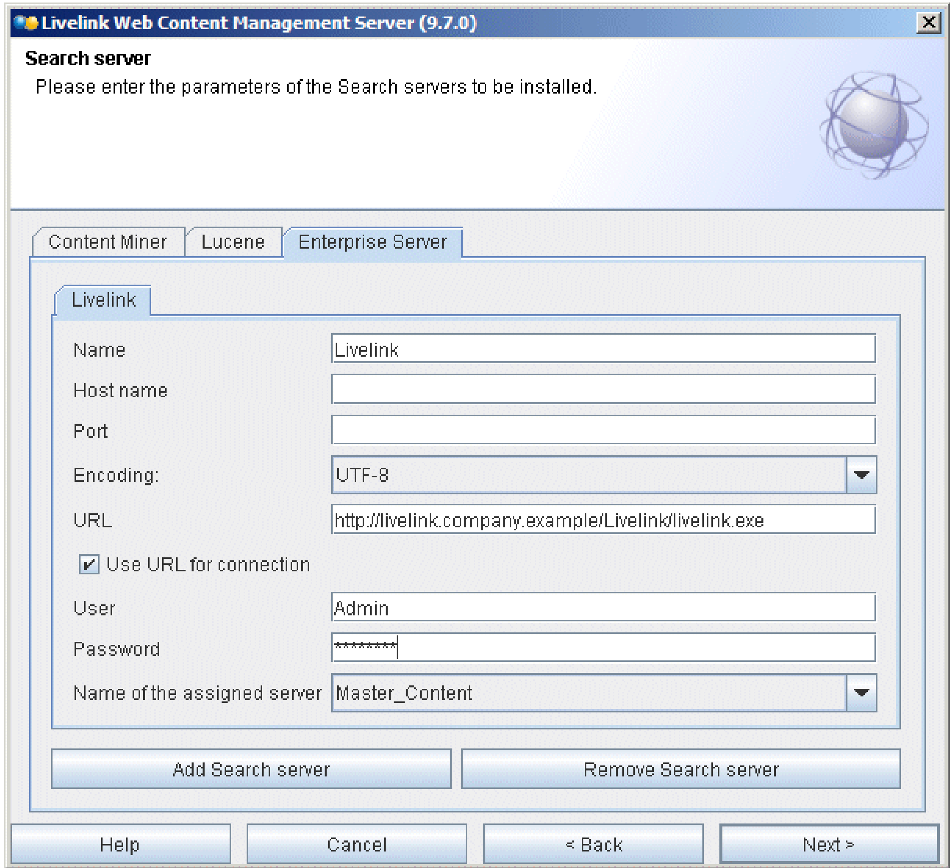
Note: For detailed information on installing a WCM system, refer to the *Livelink WCM Server - Installation Guide (WM-IGD)*.

During the installation of a WCM system, the dialog box **Search server** opens. On the **Enterprise Server** tab of this dialog box, you can add the desired number of Enterprise Server Search servers.

To install Enterprise Server search servers:

1. Click the **Enterprise Server** tab.
2. Click the **Add Search server** button.

   This opens a tab on which you can make the settings for the Enterprise Server Search server.



- **Name**

  Name of the server. You have a free choice of name, but it must be unique within the WCM system. The following characters are permitted: a–z, A–Z, 0–9 (ASCII 7 Bit), . (dot), - (hyphen) and _ (underline).

- **Host name**

  Fully qualified name of the computer hosting the Enterprise Server which is to perform the indexing and to process the search requests

- **Port**

  Connection port on the Enterprise Server (default: 2099)

- **URL**

  URL to the Enterprise Server which is to perform the indexing and to process the search requests. The URL is of type `http://livelinkserver.company.example/Livelink/livelink.exe`.

- **Use URL for connection**

  Select this check box if you want to use the Enterprise Server's URL for the connection. In this case, the entries in the fields **Host name** and **Port** will be ignored.

- **User**

  User for processing the search requests in the Enterprise Server system. The user must have read access to the slices.

  Note: For the Enterprise Server search, you can determine which index regions are queryable and displayable. These settings are user-specific. For this reason, we recommend that you configure a special user for the Enterprise Server search. Enter the information of this user here.

  For further information about permissions for the Enterprise Server search, refer to “Permissions for displaying search results” on page 139.

- **Password**

  Password for processing search requests in the Enterprise Server system

- **Name of the assigned server**

  The name of a WCM server that already exists or is to be installed and to which you want to assign this Search server

3. When you have completed all settings for the Search servers, confirm the entries by clicking the **Next** button.

Related Topics:

- “Making index regions queryable in Livelink WCM Server” on page 126
- “Displaying index regions in Livelink ECM - Enterprise Server” on page 127

Preparing indexing

Step 1 – Update the xmlactiv program

For the Enterprise Server Search server to index the data correctly, the most recent version of the xmlactiv program must be executed in your Enterprise Server system.

Copy the xmlactiv program from the directory `\livelinksearch\`<*operating system*>`\bin\` on the WCM CD to the directory <*Enterprise Server installation directory*>`\bin\`.

Step 2 – Add WCM regions to the xml.tok file

Add the following region definitions to the file <*Enterprise Server installation directory*>`\config\xml.tok`. The entries must be inserted directly below the section `Basic Open Text region definitions`.

```
#
#  WCM Region Definitions for Livelink Index
#
REGION "VIPoid" FROM "<VIPoid" TO "</VIPoid>";
REGION "VIPwebsite" FROM "<VIPwebsite" TO "</VIPwebsite>";
REGION "VIPdeploymentsystem" FROM "<VIPdeploymentsystem" TO
     "</VIPdeploymentsystem>";
REGION "VIPcollection" FROM "<VIPcollection" TO "</VIPcollection>";
REGION "VIPtitle" FROM "<VIPtitle" TO "</VIPtitle>";
REGION "VIPsubtitle" FROM "<VIPsubtitle" TO "</VIPsubtitle>";
REGION "VIPkeywordlist" FROM "<VIPkeywordlist" TO
"</VIPkeywordlist>";
REGION "VIPdescription" FROM "<VIPdescription" TO
"</VIPdescription>";
REGION "VIPurl" FROM "<VIPurl" TO "</VIPurl>";
REGION "VIPpath" FROM "<VIPpath" TO "</VIPpath>";
```

You will find a file named `xml.tok` containing these entries in the directory `WCM installation directory\examples\livelinksearch\`.

All entries for a `REGION` must be located in a single line. The regions `VIPoid` and `VIPcollection` are mandatory. The other regions can be used for extended search functions.

Creating an XML Activator Producer data flow in *Livelink ECM - Enterprise Server*

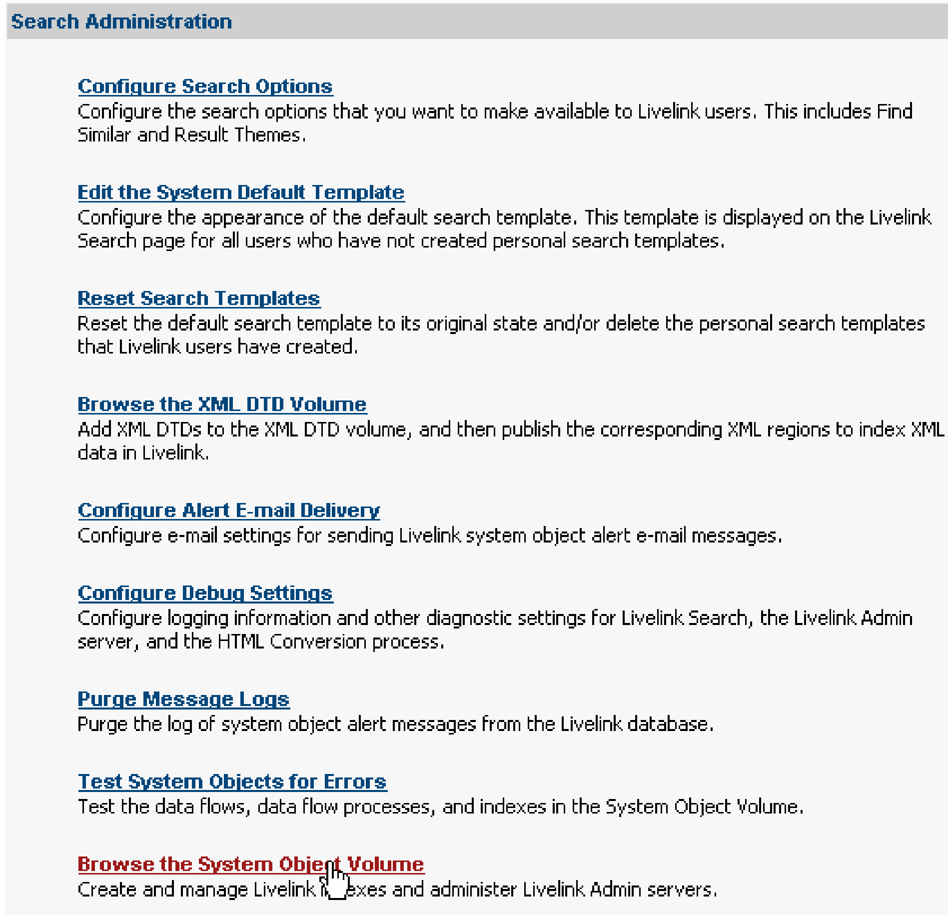
You create an XML Activator Producer data flow to index information generated by a third-party application, such as the WCM system.

To create an XML Activator Producer data flow in *Livelink ECM - Enterprise Server*:

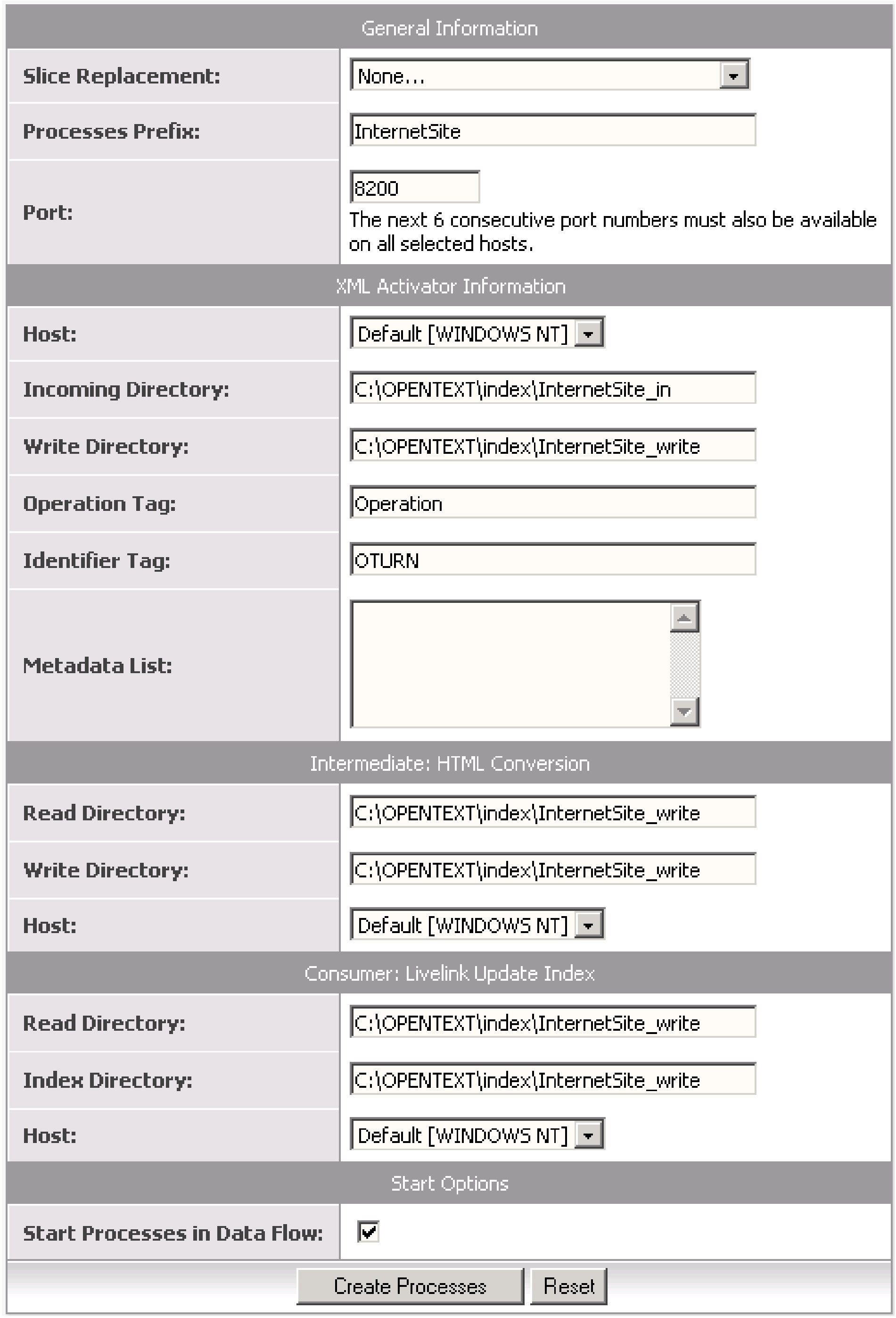
1. Open the **Livelink Administration** page.

   The URL is of type `http://livelinkserver.company.example/Livelink/livelink.exe?func=admin.index`.

2. Log in to the Enterprise Server system as the Admin user and navigate to the **Search Administration** section.



3. Click the **Browse the System Object Volume** link.
4. Log in with the user information you specified when setting up the Enterprise Server Search server (see “Installing Enterprise Server search servers in the WCM system” on page 117).
5. On the **Livelink System** page, click **XML Activator Producer Data Source** on the **Add New Item** menu.



For detailed information on the individual fields, refer to the Enterprise Server online help.

For using the Enterprise Server search in the WCM system, the following fields are of special importance:

- **Process Prefix**

  Display name for objects associated with this index

  When creating a collection, use this identifier as slice name.

- **Incoming Directory**

  Absolute path to the directory from which the XML Activator Producer process reads the XML files generated by the third-party application

  Create this directory manually. If *Livelink ECM - Enterprise Server* and Livelink WCM Server are installed on different host computers, the directory must be shared.

- **Write Directory**

  Absolute path to the directory to which the XML Activator Producer process writes the data it extracts

  Create this directory on the same file system level as the **Incoming Directory**. The path in this field is automatically entered into the other directory fields of the dialog box.

- **Operation Tag**

  Enter `Operation` here.

- **Identifier Tag**

  Enter `OTURN` here.

6. Click the **Create Processes** button.

   The Enterprise Server system creates a new data source folder. This folder contains all of the system objects that correspond to a particular index: Alias, Data Flow Manager, and Search Manager.

Adding collections in the WCM system

Note: For detailed information on collections, refer to the *Livelink WCM Server - Search Server Connector for Lucene Manual (WMLS-GGD)*.

Collections are the basis for searching contents in a WCM-managed website. An internal collection is created from a set of documents that is managed by the WCM system. An external collection is based on a document set that is supplied by any external system, e.g. *Livelink ECM - Enterprise Server*.

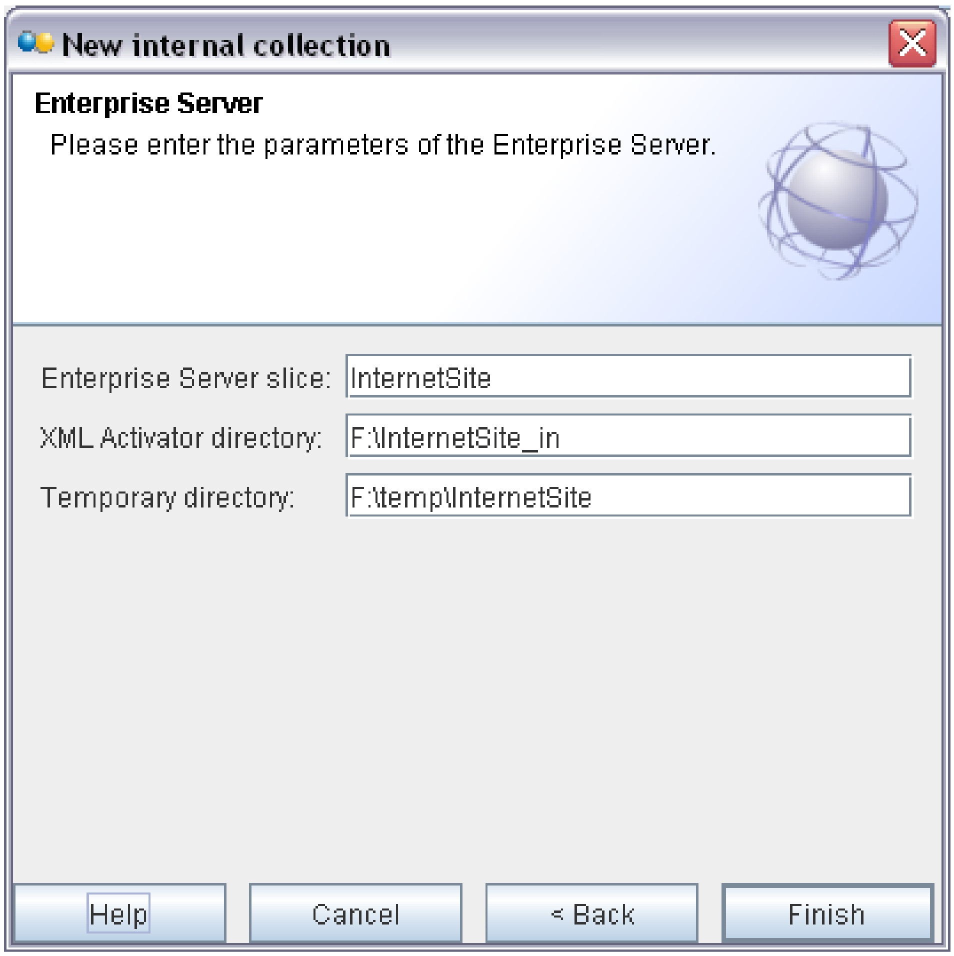
To add an internal collection for WCM contents to an Enterprise Server Search server:

1. In the Admin client of Livelink WCM Server, select **Configuration** ⇒ **Search servers** and mark the desired Enterprise Server Search server.
2. Choose **New internal collection** on the context menu or click the corresponding icon.

 Icon for adding an internal collection

3. Use the wizard for adding an internal collection.

   For Enterprise Server Search servers, the **Enterprise Server parameters** dialog box is especially important:



- **Enterprise Server slice**

  Slice name. Enter the **Processes Prefix** you specified when creating the XML Activator Producer Data Source.

  Note: For performance reasons, we recommend that you create only one collection per slice. You can create several internal collections in a slice. In this case, however, you have to make sure that all entries in a slice have a unique URL.

- **XML Activator directory**

  The command files created in the temporary directory will be moved to this directory.

  Enter the path to the shared **Incoming Directory** that you specified when creating the XML Activator Producer Data Source.

  If *Livelink ECM - Enterprise Server* and Livelink WCM Server are installed on different host computers, the directory must be mapped to a network drive on the WCM system's host computer. Enter the path accordingly.

- **Temporary directory**

  The WCM system uses this directory for generating the command files for the XML Activator. In this way, the XML Activator receives instructions when a WCM object changes. The instructions refer to how to process the changes, e.g. re-index the object or remove the object from the index.

  Create this directory on the same physical drive as the XML Activator directory.

Before you can use the new collection for search requests, the collection must be synchronized. The synchronization process matches the WCM-managed document set with the document set indexed by the Search server.

4. Select **System administration** ⇒ **Search servers** ⇒ **<*Search server name*>** and mark the desired collection.
5. Choose **Synchronize collection** on the context menu or click the corresponding icon.

    Icon for synchronizing an internal collection

6. Confirm the security prompts by clicking the **Yes** and **OK** buttons.

To add an external collection for an Enterprise Server slice to an Enterprise Server Search server:

1. Select **Configuration** ⇒ **Search servers** and mark the desired Search server.
2. Choose **New external collection** on the context menu or click the corresponding icon.

    Icon for adding an external collection

3. Use the wizard for adding an external collection.

   For Enterprise Server Search servers, the following parameter is especially important:

   Enterprise Server slice: name of the slice to be indexed

To add an external collection for another document set to an Enterprise Server Search server:

1. Select **Configuration** ⇒ **Search servers** and mark the desired Search server.
2. Choose **New external collection** on the context menu or click the corresponding icon.

   
   Icon for adding an external collection

3. Use the wizard for adding an external collection.

   For Enterprise Server Search servers, the following parameter is especially important:

   Enterprise Server slice: slice name. Enter the **Processes Prefix** you specified when creating the XML Activator Producer Data Source.

   Note: You can only add one external collection per slice.

4. Before you can use the new collection for search requests, you must add directory structures to the collection by means of the command line tools `AddDocument` and `AddDirectory` (see “AddDocument” on page 143 and “AddDirectory” on page 144).

Making index regions queryable in Livelink WCM Server

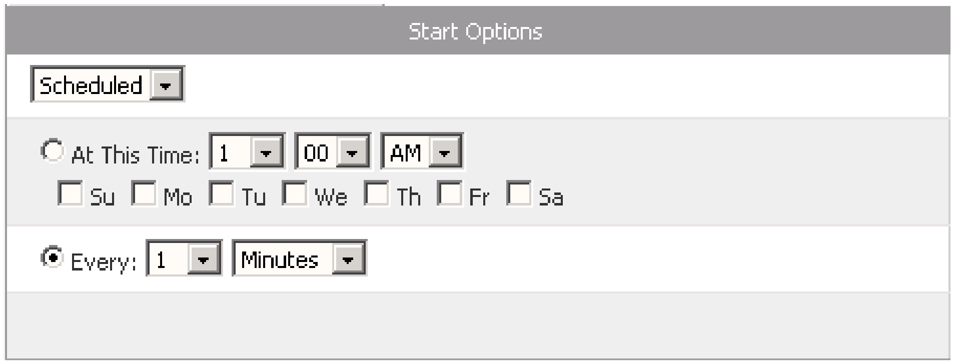
1. On the **Livelink System** page, click the **<*Processes Prefix*> Data Source Folder** link.
2. Click the **Functions** icon of the Search Manager and select **Info** ⇒ **Regions**.
3. On the Regions tab, select the **Queryable** check box for all regions starting with the prefix `VIP`.
4. Confirm by clicking the **Update** button.

Starting the XML activator process in Livelink WCM Server

When starting, the XML Activator process scans the specified incoming directory and updates the index according to the XML files located in this directory.

To start the XML Activator process:

1. On the **Livelink System** page, click the **<*Processes Prefix*> Data Source Folder** link.
2. Click the **<*Processes Prefix*> Data Flow Manager** link.
3. Click the **Functions** icon of the XML Activator and select **Info** ⇒ **Specific**.
4. Make the following settings in the **Start Options** section:



- Click **Scheduled** in the drop-down list.
- Click the **Every** radio button and enter an interval of 1 minute using the drop-down lists.

  Note: If necessary, adapt the interval to the situation in your system.

5. Confirm the entries by clicking the **Update** button.
6. Click the **Functions** icon of the XML Activator and select **Start**.

Displaying index regions in *Livelink ECM - Enterprise Server*

After indexing has been completed, you specify in *Livelink ECM - Enterprise Server* which index regions will be displayed and can thus be searched via a WCM-managed website.

To configure the display of index regions:

1. On the **Livelink System** page, click the **<*Processes Prefix*> Data Source Folder** link.
2. Click the **Functions** icon of the Search Manager and select **Info** ⇒ **Regions**.
3. To allow users to display a region on their **Search Result** page, select the region's **Displayable** check box.

   Note: If a region does not have a **Displayable** check box, it is because no item with that attribute has yet been added to the Enterprise Server database. After an item with the attribute in question is added and indexed, a **Displayable** check box appears in its row on the **Configure Regions** page. To add items with this attribute to the database, synchronize the collection. To do so, launch the Admin client and select **System administration** ⇒ **Search servers** ⇒ **<*Search server name*>** ⇒ **<*collection name*>**. Right-click the collection and choose **Synchronize collection** on the context menu.

   At least the following regions must be marked:

   - VIPoid

- VIPcollection

4. Confirm by clicking the **Update** button.
5. Choose **Search** on the **Tools** menu.
6. Click the **Display Options** button.
7. On the **Display Options** page, select the **Display** check box for all regions that are to be displayed.

   At least the following regions must be marked:

   - VIPoid
   - VIPcollection

8. Confirm by clicking the **Save** button.

5.2.2 Search based on *Livelink ECM - Enterprise Server* 9.5.0

Note: *Livelink ECM - Enterprise Server* and Livelink WCM Server use a shared directory for exchanging data. For this reason, both the Enterprise Server and the WCM server, to which the Search server is assigned, must have write access to this shared directory.

The Enterprise Server search can be used in different scenarios.

Scenario 1 – Searching website contents

Realizing this scenario requires the following steps in *Livelink ECM - Enterprise Server* and in Livelink WCM Server:

1. Livelink WCM Server: Install Enterprise Server Search server (see “Installing Enterprise Server search servers in the WCM system” on page 129).
2. Enterprise Server: Create XML Activator Producer data flow (see “Creating an XML Activator Producer data flow in Livelink ECM - Enterprise Server” on page 131).
3. Livelink WCM Server: Add collections (see “To add an internal collection for WCM contents to an Enterprise Server Search server:” on page 135).
4. Enterprise Server: Start the XML Activator process (see “Starting the XML Activator process in Livelink ECM - Enterprise Server” on page 137).
5. Enterprise Server: Display index regions (see “Displaying index regions in Livelink ECM - Enterprise Server” on page 138).

Scenario 2 – Searching Enterprise Server contents

Realizing this scenario requires the following steps in Livelink WCM Server:

1. Install Enterprise Server Search server (see the “Installing Enterprise Server search servers in the WCM system” on page 129).
2. Add collections (see “To add an external collection for an Enterprise Server slice to an Enterprise Server Search server:” on page 136).

Scenario 3 – Searching other document sets

Realizing this scenario requires the following steps in *Livelink ECM - Enterprise Server* and Livelink WCM Server:

1. Livelink WCM Server: Install Enterprise Server Search server (see “Installing Enterprise Server search servers in the WCM system” on page 129).
2. Enterprise Server: Create XML Activator Producer data flow (see “Creating an XML Activator Producer data flow in Livelink ECM - Enterprise Server” on page 131).
3. Livelink WCM Server: Add collections (see “To add an external collection for another document set to an Enterprise Server Search server:” on page 137).
4. Enterprise Server: Start the XML Activator process (see “Starting the XML Activator process in Livelink ECM - Enterprise Server” on page 137).

Installing Enterprise Server search servers in the WCM system

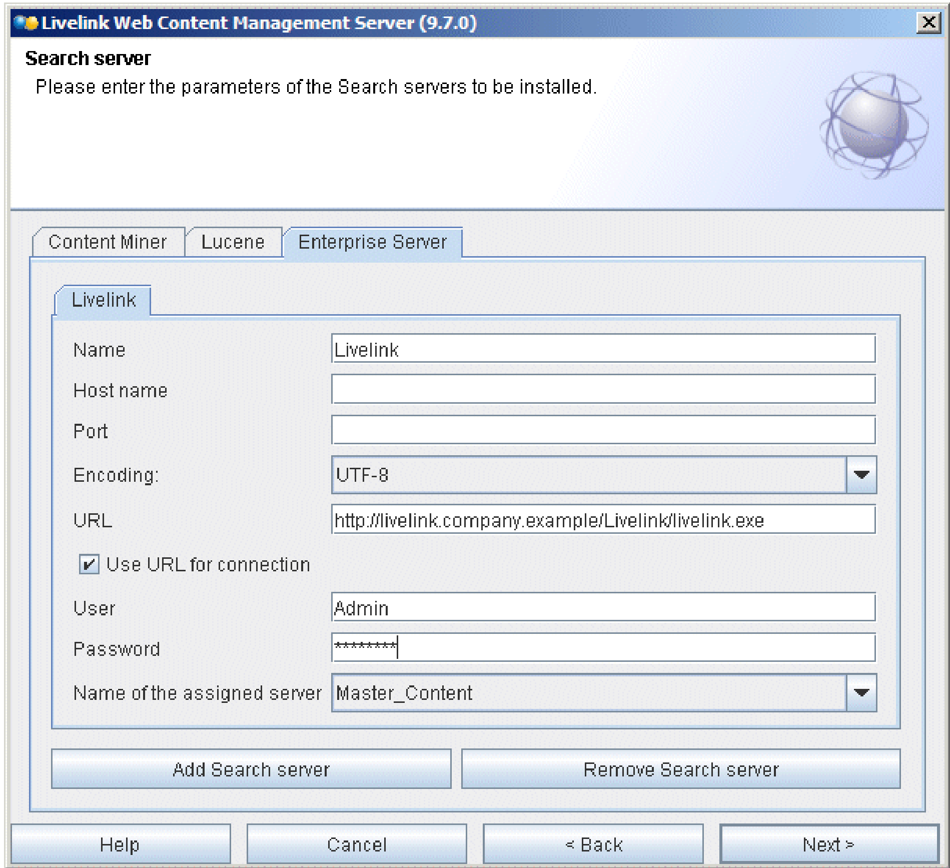
Note: For detailed information on installing a WCM system, refer to the *Livelink WCM Server - Installation Guide (WM-IGD)*.

During the installation of a WCM system, the dialog box **Search server** opens. On the **Enterprise Server** tab of this dialog box, you can add the desired number of Enterprise Server Search servers.

To install Enterprise Server search servers:

1. Click the **Enterprise Server** tab.
2. Click the **Add Search server** button.

   This opens a tab on which you can make the settings for the Enterprise Server Search server.



- **Name**

  Name of the server. You have a free choice of name, but it must be unique within the WCM system. The following characters are permitted: a–z, A–Z, 0–9 (ASCII 7 Bit), . (dot), - (hyphen) and _ (underline).

- **Host name**

  Fully qualified name of the computer hosting the Enterprise Server which is to perform the indexing and to process the search requests

- **Port**

  Connection port on the Enterprise Server (default: 2099)

- **URL**

  URL to the Enterprise Server which is to perform the indexing and to process the search requests. The URL is of type `http://livelinkserver.company.example/Livelink/livelink.exe`.

- **Use URL for connection**

  Select this check box if you want to use the Enterprise Server's URL for the connection. In this case, the entries in the fields **Host name** and **Port** will be ignored.

- **User**

  User for processing the search requests in the Enterprise Server system. The user must have read access to the slices.

  Note: For the Enterprise Server search, you can determine which index regions are queryable and displayable. These settings are user-specific. For this reason, we recommend that you configure a special user for the Enterprise Server search. Enter the information of this user here.

  For further information about permissions for the Enterprise Server search, refer to "Permissions for displaying search results" on page 139.

- **Password**

  Password for processing search requests in the Enterprise Server system

- **Name of the assigned server**

  The name of a WCM server that already exists or is to be installed and to which you want to assign this Search server

3. When you have completed all settings for the Search servers, confirm the entries by clicking the **Next** button.

Related Topics:

- "Displaying index regions in Livelink ECM - Enterprise Server" on page 138

Creating an XML Activator Producer data flow in *Livelink ECM - Enterprise Server*

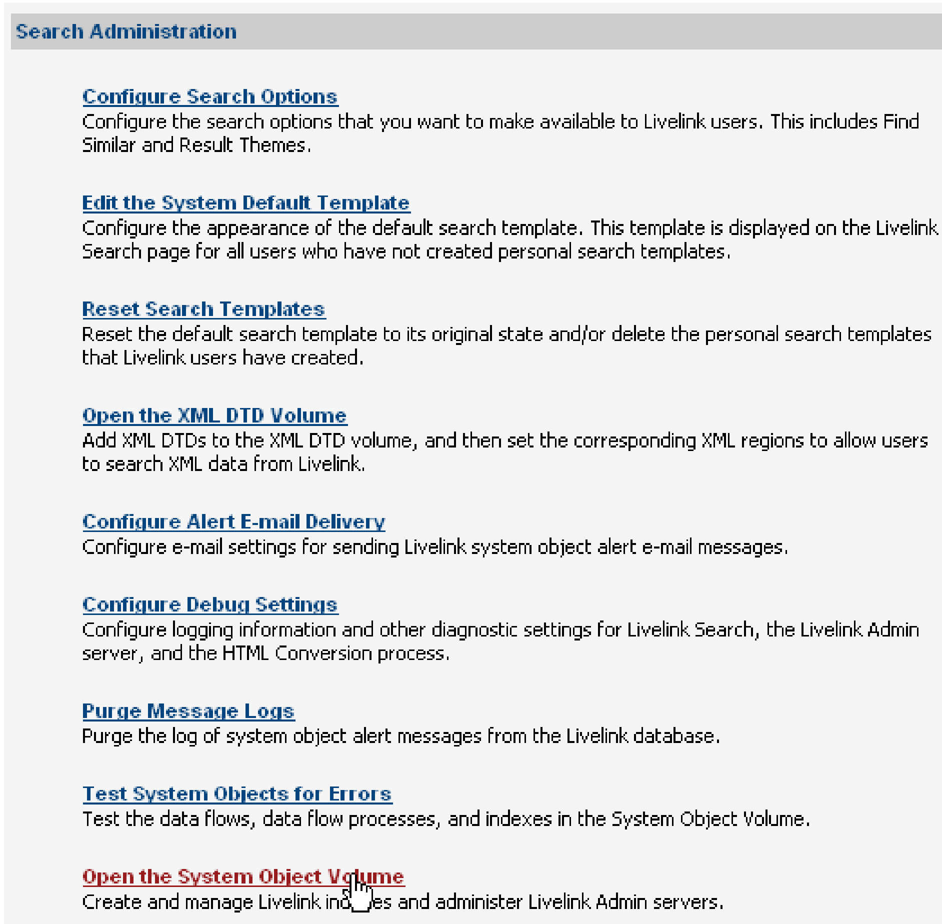
You create an XML Activator Producer data flow to index information generated by a third-party application, such as the WCM system.

To create an XML Activator Producer data flow in the Enterprise Server system:

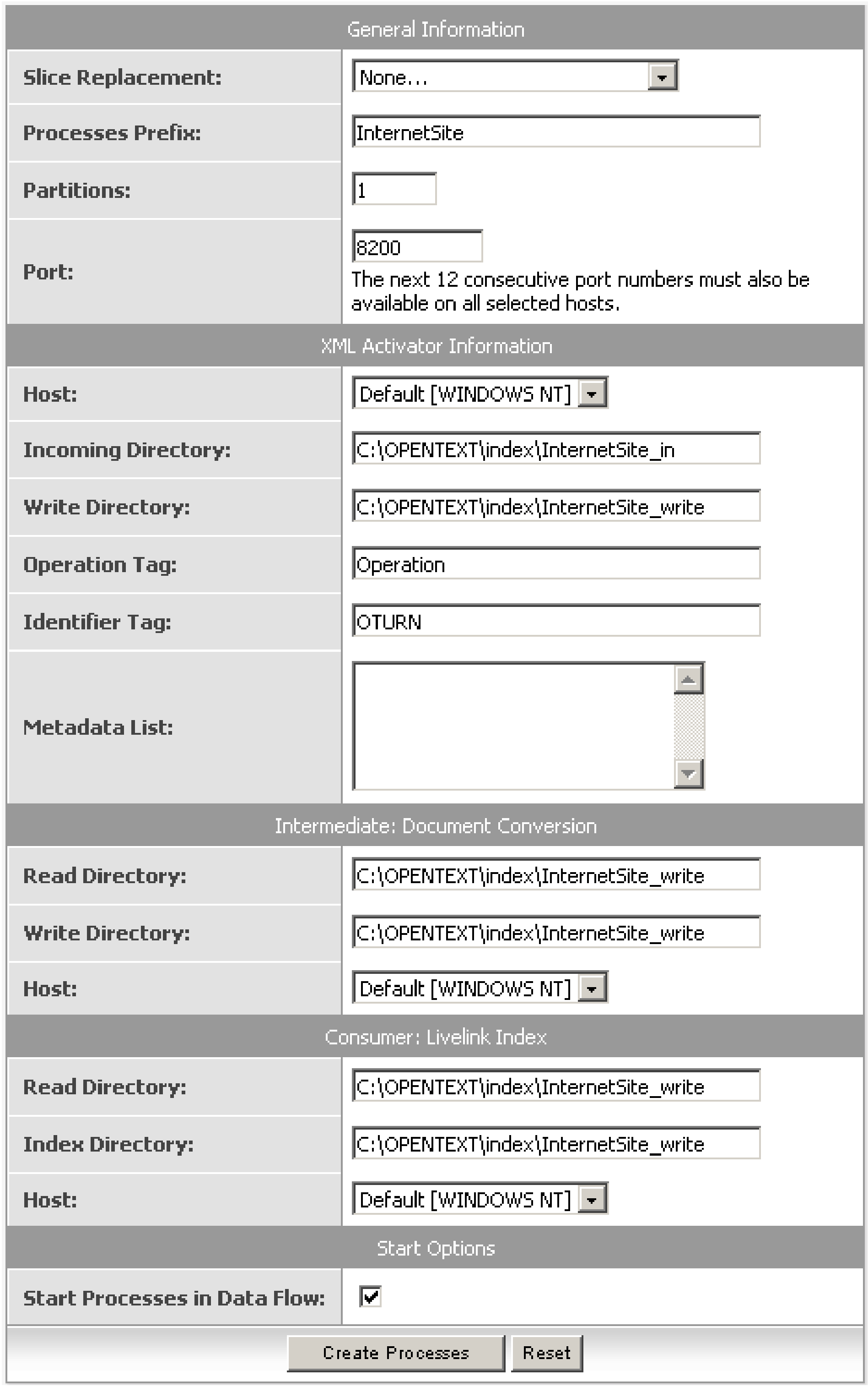
1. Open the **Livelink Administration** page.

   The URL is of type `http://livelinkserver.company.example/Livelink/livelink.exe?func=admin.index`.

2. Log in to the Enterprise Server system as the Admin user and navigate to the **Search Administration** section.



3. Click the **Open the System Object Volume** link.
4. Log in with the user information you specified when setting up the Enterprise Server Search server (see “Installing Enterprise Server search servers in the WCM system” on page 129).
5. On the **Livelink System** page, click **XML Activator Producer Data Source** on the **Add Item** menu.


General Information
Slice Replacement:
None...
Processes Prefix:
InternetSite
Partitions:
1
Port:
8200
The next 12 consecutive port numbers must also be available on all selected hosts.
XML Activator Information
Host:
Default [WINDOWS NT]
Incoming Directory:
C:\OPENTEXT\index\InternetSite_in
Write Directory:
C:\OPENTEXT\index\InternetSite_write
Operation Tag:
Operation
Identifier Tag:
OTURN
Metadata List:
Intermediate: Document Conversion
Read Directory:
C:\OPENTEXT\index\InternetSite_write
Write Directory:
C:\OPENTEXT\index\InternetSite_write
Host:
Default [WINDOWS NT]
Consumer: Livelink Index
Read Directory:
C:\OPENTEXT\index\InternetSite_write
Index Directory:
C:\OPENTEXT\index\InternetSite_write
Host:
Default [WINDOWS NT]
Start Options
Start Processes in Data Flow:
Create Processes
Reset

For detailed information on the individual fields, refer to the Enterprise Server online help.

For using the Enterprise Server search in the WCM system, the following fields are of special importance:

- **Process Prefix**

  Display name for objects associated with this index

  When creating a collection, use this identifier as slice name.

- **Incoming Directory**

  Absolute path to the directory from which the XML Activator Producer process reads the XML files generated by the third-party application

  Create this directory manually. If *Livelink ECM - Enterprise Server* and Livelink WCM Server are installed on different host computers, the directory must be shared.

- **Write Directory**

  Absolute path to the directory to which the XML Activator Producer process writes the data it extracts

  Create this directory on the same file system level as the **Incoming Directory**. The path in this field is automatically entered into the other directory fields of the dialog box.

- **Operation Tag**

  Enter `Operation` here.

- **Identifier Tag**

  Enter `OTURN` here.

6. Confirm the settings by clicking the **Create Processes** button.

   The Enterprise Server system creates a new data source folder. This folder contains all of the system objects that correspond to a particular index: Shortcut, Data Flow Manager, Partition Map, and Search Manager.

Adding collections in the WCM system

Note: For detailed information on collections, refer to the *Livelink WCM Server - Search Server Connector for Lucene Manual (WMLS-GGD)*.

Collections are the basis for searching contents in a WCM-managed website. An internal collection is created from a set of documents that is managed by the WCM system. An external collection is based on a document set that is supplied by any external system, e.g. *Livelink ECM - Enterprise Server*.

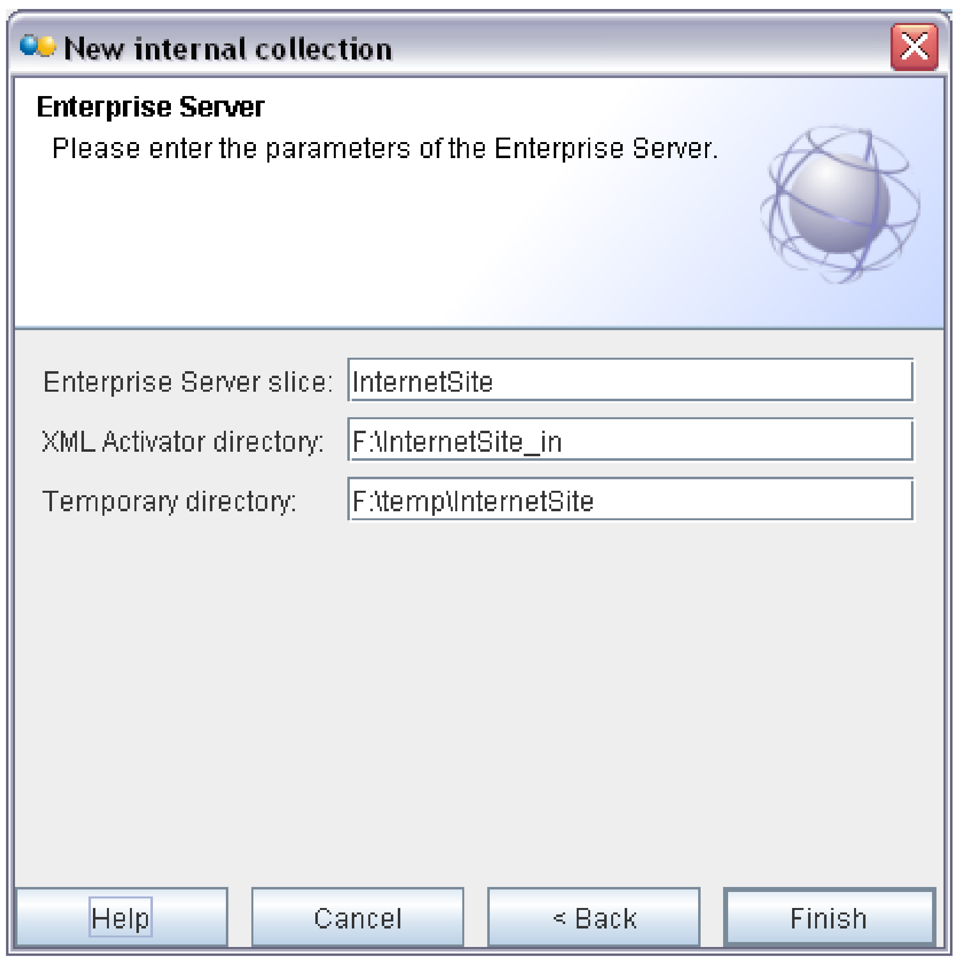
To add an internal collection for WCM contents to an Enterprise Server Search server:

1. In the Admin client of Livelink WCM Server, select **Configuration** ⇒ **Search servers** and mark the desired Enterprise Server Search server.
2. Choose **New internal collection** on the context menu or click the corresponding icon.

    Icon for adding an internal collection

3. Use the wizard for adding an internal collection.

   For Enterprise Server Search servers, the **Enterprise Server parameters** dialog box is especially important:

   - **Enterprise Server slice**

     Slice name. Enter the **Processes Prefix** you specified when creating the XML Activator Producer Data Source.

Note: For performance reasons, we recommend that you create only one collection per slice. You can create several internal collections in a slice. In this case, however, you have to make sure that all entries in a slice have a unique URL.

- **XML Activator directory**

  The command files created in the temporary directory will be moved to this directory.

  Enter the path to the shared **Incoming Directory** that you specified when creating the XML Activator Producer Data Source.

  If *Livelink ECM - Enterprise Server* and Livelink WCM Server are installed on different host computers, the directory must be mapped to a network drive on the WCM system's host computer. Enter the path accordingly.

- **Temporary directory**

  The WCM system uses this directory for generating the command files for the XML Activator. In this way, the XML Activator receives instructions when a WCM object changes. The instructions refer to how to process the changes, e.g. re-index the object or remove the object from the index.

  Create this directory on the same physical drive as the XML Activator directory.

Before you can use the new collection for search requests, the collection must be synchronized. The synchronization process matches the WCM-managed document set with the document set indexed by the Search server.

4. Select **System administration** ⇒ **Search servers** ⇒ **<*Search server name*>** and mark the desired collection.
5. Choose **Synchronize collection** on the context menu or click the corresponding icon.

    Icon for synchronizing an internal collection

6. Confirm the security prompts by clicking the **Yes** and **OK** buttons.

To add an external collection for an Enterprise Server slice to an Enterprise Server Search server:

1. Select **Configuration** ⇒ **Search servers** and mark the desired Search server.
2. Choose **New external collection** on the context menu or click the corresponding icon.

    Icon for adding an external collection

3. Use the wizard for adding an external collection.

For Enterprise Server Search servers, the following parameter is especially important:

Enterprise Server slice: name of the slice to be indexed

To add an external collection for another document set to an Enterprise Server Search server:

1. Select **Configuration** ⇒ **Search servers** and mark the desired Search server.
2. Choose **New external collection** on the context menu or click the corresponding icon.

    Icon for adding an external collection

3. Use the wizard for adding an external collection.

   For Enterprise Server Search servers, the following parameter is especially important:

   Enterprise Server slice: slice name. Enter the **Processes Prefix** you specified when creating the XML Activator Producer Data Source.

   Note: You can only add one external collection per slice.

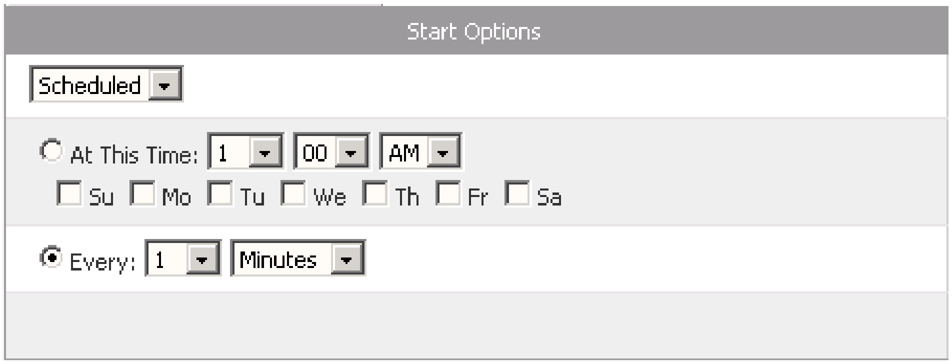
4. Before you can use the new collection for search requests, you must add directory structures to the collection by means of the command line tools `AddDocument` and `AddDirectory` (see “AddDocument” on page 143 and “AddDirectory” on page 144).

Starting the XML Activator process in *Livelink ECM - Enterprise Server*

When starting, the XML Activator process scans the specified incoming directory and updates the index according to the XML files located in this directory.

To start the XML Activator process:

1. On the **Livelink System** page, click the **<*Processes Prefix*> Data Source Folder** link.
2. Click the **<*Processes Prefix*> Data Flow Manager** link.
3. Click the **Functions** icon  of the XML Activator and select **Properties** ⇒ **Specific**.
4. Make the following settings in the **Start Options** section:



- Click **Scheduled** in the drop-down list.
- Click the **Every** radio button and enter an interval of 1 minute using the drop-down lists.

  Note: If necessary, adapt the interval to the situation in your system.

5. Confirm the entries by clicking the **Update** button.
6. Click the **Functions** icon of the XML Activator and select **Start**.

Displaying index regions in *Livelink ECM - Enterprise Server*

To configure the display of index regions:

1. On the **Livelink System** page, click the **<*Processes Prefix*> Data Source Folder** link.
2. Click the **Functions** icon of the Search Manager and select **Properties** ⇒ **Regions**.
3. Select the **Queryable**, **Displayable**, and **Search By Default** check boxes for all regions starting with the prefix `VIP`.
4. Confirm by clicking the **Update** button.
5. Choose **Search** on the **Tools** menu.
6. Click the **Display Options** button.
7. On the **Display Options** page, select the **Display** check box for all regions that are to be displayed.

   At least the following regions must be marked:

   - VIPoid
   - VIPcollection
8. Confirm by clicking the **Save** button.

5.3 Permissions for displaying search results

Each collection is assigned to a Search server. In the Search server's configuration, you specify a Enterprise Server user including password, whose information is used for checking the permissions for search requests in the Enterprise Server system (see “Installing Enterprise Server search servers in the WCM system” on page 117). For formulating such search requests, the `VipContentMinerBean.createQuery()` method is provided.

Scenario 1 – Searching website contents

The collection to be searched is based on an XML Activator Producer Data Source. This data source is an Enterprise Server item for which you can set permissions in the Enterprise Server system. *Livelink ECM - Enterprise Server* applies the permissions set for the XML Activator Producer Data Source to all items contained in the collection.

For a search to return results, the default user specified in the configuration must have read access to the XML Activator Producer Data Source.

The actual access rights are checked by the WCM system. Before displaying search results, the system evaluates the access rights of the logged-in user. The user will only see items for which the user has read rights in the WCM system.

Scenario 2 – Searching Enterprise Server contents

In the Enterprise Server system, you can set different permissions for each Enterprise Server item contained in the collection. Before displaying search results, the system evaluates the permissions of the default user specified in the configuration. In order to protect confidential documents in your Enterprise Server system from unauthorized access, this user should have the same permissions as the Public Access group.

Alternately, you can specify a different user in search requests. For this purpose, the `VipContentMinerBean.createQuery(username, password)` method is provided. In this case, the permissions of this user and not of the default user will be checked. In this way, you can create personalized search requests.

Scenario 3 – Searching other document sets

The collection to be searched is based on an XML Activator Producer Data Source. This data source is an Enterprise Server item for which you can set permissions in the Enterprise Server system. *Livelink ECM - Enterprise Server* applies the permissions set for the XML Activator Producer Data Source to all items contained in the collection.

For a search to return results, the default user specified in the configuration must have read access to the XML Activator Producer Data Source.

5.4 Using the Enterprise Server search on websites

Search in websites

For integrating search functions in a website, the `VipContentMinerBean` is provided. As this bean offers a general search API, you can implement search pages for your website in the same way as for Content Miner or the Search Server Connector for Lucene.

For detailed information on creating search pages, refer to the relevant chapters of the *Livelink WCM Server - Search Server Connector for Lucene Manual (WMLS-GGD)* or Content Miner Manual.

There are two possible ways to define a search for the search engine integrated in *Livelink ECM - Enterprise Server*:

1. The *Livelink Query Language (NLQ)* — the syntax of this query language is described in the Enterprise Server User Manual.
2. The Enterprise Server Search API — use a `Query` object with corresponding additional parameters and a single blank as the search string.

Example 5-1:

```
Query query = contentMinerBean.createQuery(serverName);
query.setSearchString(" ");
query.addAdditionalParameter("lookFor1", "allwords");
query.addAdditionalParameter("where1", "bread butter");
query.addAdditionalParameter("boolean1", "AND");
query.addAdditionalParameter("lookFor2", "anywords");
query.addAdditionalParameter("where2", "cheese salad onion");
```

For information on the Enterprise Server Search API, refer to the Using the Search API guide, which is available on the Open Text Knowledge Center (https://knowledge.opentext.com).

Search in the Content client

After installing and configuring a Search server, the search functions are also available in the Content client. To learn more about this, refer to Section 12 "Finding Objects and Editing Them Together" in *Livelink WCM Server - Content client User Manual (WMCC-GGD)*.

As with searching websites, the Livelink Query Language is used here, too.

5.5 Managing external collections with the command line tools

Note: This section is intended for administrators with the necessary knowledge of the search functions provided by Livelink WCM Server.

The *command line tools* are used for managing external collections. They perform the following functions:

- indexing documents for external collections
- retrieving information on external collections and on the Index system used

Note: The command line tools that only read the index (e.g. `GetAvailableCollections`) can also be used for internal collections.

The command line tools are located in the directory `WCM installation directory\livelinksearch\<`*`Search server name`*`>\tools\`.

To run the command line tools, you must specify appropriate parameters that are required to control the commands. The parameters determine which WCM server is to process the command, and they also contain necessary information about the actual indexing action.

The command parameters that specify the WCM server are identical for all command line tools. For this reason, you can simplify the process of calling the command line tools by defining these default parameters in a configuration file and by specifying this file as a call parameter.

Note: Nearly all command-specific parameters can be specified in the configuration file. We recommend, however, that you include only those parameters in the file that are rarely subject to changes.

This section deals with the following topics:

- "The commands.properties configuration file" on page 142
- "General parameters of the command line tools" on page 143
- "AddDocument" on page 143
- "DeleteDocument" on page 144
- "AddDirectory" on page 144
- "DeleteDirectory" on page 145
- "GetAvailableCollections" on page 145
- "ListSources" on page 146
- "RemoveCollection" on page 146
- "GetSearchEngineMetadata" on page 147
- "Query" on page 147

5.5.1 The `commands.properties` configuration file

By default, the configuration file `commands.properties` is saved with the command line tools in the directory `WCM installation directory\livelinksearch\<Search server name>\tools\` during the installation. The file contains default parameters corresponding to the information specified during installation. The configuration file looks as follows:

```
#---------------------------------------------------------
# configuration properties of the Livelink search server
# - options in command line have a higher priority
#---------------------------------------------------------

# Incoming directory of the XML Activator Data Source.
xmlActivatorDir = F:\InternetSite_in

# Temporary directory
tempDir = F:\InternetSite_temp

# URL of Livelink CGI
livelinkURL =
http://livelinkserver.company.example/livelink/livelink.exe

# Username for Livelink connections
username = LivelinkUse        r

# Password for Livelink connections
password = livelink

# Livelink slice
slice = InternetSite
```

Notes:

- The configuration file of the command line tools uses the syntax of Java *properties files*. Parameters must be specified in the form:

  <*key*> = <*value*>

- In contrast to the entries in the command line, the keys (parameter identifiers) in the configuration file are specified without a preceding minus sign (-).
- Backslashes (“\”) are interpreted as escape characters in Java properties files. For this reason, you have to add a backslash before backslashes that really are to be interpreted as such (e.g. in paths).
- Parameters specified in the command line take priority over the corresponding entries in the configuration file.

5.5.2 General parameters of the command line tools

The parameters described below apply to all commands. They are used to define general settings and the basic behavior of the individual commands. These parameters are mandatory. If a parameter is not specified, the corresponding entry in the `commands.properties` file is used.

General parameters of the command line tools

`-conf`
: Name of the configuration file. This option can be used to specify the name and/or location of the configuration file. If this parameter is not specified, the file is expected to be in the current directory and to have the name `commands.properties`.

  The parameter cannot be specified in the properties file. It is optional.

`-livelinkURL`
: URL to the Enterprise Server which is to perform the indexing and to process the search requests.

`-username`
: User for processing search requests in the Enterprise Server system. The user must have read access to the slices.

`-password`
: Password for processing search requests in the Enterprise Server system

`-slice`
: Name of the Enterprise Server slice

`-xmlActivatorDir`
: XML Activator directory. The command files created in the temporary directory will be moved to this directory.

`-tempDir`
: Temporary directory. The WCM system uses this directory for generating the command files for the XML Activator Producer process. In this way, the XML Activator receives instructions when a WCM object changes. The instructions refer to how to process the changes, e.g. re-index the object or remove the object from the index.

5.5.3 AddDocument

`AddDocument` is used to add a single document specified by its URL to an external collection.

Parameters of the command line tool AddDocument

`-source`
: Absolute path in the file system to the document that is to be added

`-url`
Fully qualified URL of the document that is to be added

Example 5-2:

```
AddDocument -livelinkURL
http://livelinkserver.company.example/livelink/
     livelink.exe -username LivelinkUser -password livelink
     -slice InternetSite -xmlActivatorDir F:\InternetSite_in
     -tempDir F:\InternetSite_temp -source
               D:\InternetSite\index.html
     -url http://wcmserver.company.example/index.html
```

5.5.4 DeleteDocument

`DeleteDocument` removes the specified document from an external collection.

Parameters of the command line tool DeleteDocument

`-url`
Fully qualified URL of the document that is to be removed

Example 5-3:

```
DeleteDocument  -livelinkURL
http://livelinkserver.company.example/
     livelink/livelink.exe -username LivelinkUser -password
livelink
     -slice InternetSite -xmlActivatorDir F:\InternetSite_in
     -tempDir F:\InternetSite_temp
     -url http://wcmserver.company.example/index.html
```

5.5.5 AddDirectory

`AddDirectory` adds directory structures to an external collection. After the command has been executed, the individual documents of the added directory are part of the index.

Parameters of the command line tool AddDirectory

`-sourceDir`
Absolute path in the file system to the directory that is to be indexed recursively. Subdirectories will be indexed as well.

`-baseURL`
Fully qualified URL of the directory specified in the parameter `-sourceDir`. The web server uses this URL to access the directory.

Example 5-4:

```
AddDirectory -livelinkURL http://livelinkserver.company.example/
   livelink/livelink.exe -username LivelinkUser -password
livelink
     -slice InternetSite -xmlActivatorDir F:\InternetSite_in
     -tempDir F:\InternetSite_temp -sourceDir D:\InternetSite
     -baseURL http://wcmserver.company.example/InternetSite
```

5.5.6 DeleteDirectory

`DeleteDirectory` removes the documents of a directory from the collection. The directory must have been added to the collection using `AddDirectory`.

Parameters of the command line tool DeleteDirectory

`-sourceDir`
: Absolute path in the file system to the directory whose documents are to be removed from the collection. The directory must have been added using `AddDirectory`.

`-baseURL`
: Fully qualified URL of the directory to be removed from the collection. The web server uses this URL to access the directory.

Example 5-5:

```
DeleteDirectory -livelinkURL
http://livelinkserver.company.example/
     livelink/    livelink.exe -username LivelinkUser -password
livelink
     -slice InternetSite -xmlActivatorDir F:\InternetSite_in
     -tempDir F:\InternetSite_temp -sourceDir D:\InternetSite
     -baseURL http://wcmserver.company.example/InternetSite
```

5.5.7 GetAvailableCollections

`GetAvailableCollections` returns a list of all collections contained in the specified slice. The number of documents per collection is also returned.

Example 5-6:

```
GetAvailableCollections
     -livelinkURL http://livelinkserver.company.example/livelink/

        livelink.exe -username LivelinkUser -password livelink
     -slice InternetSite -xmlActivatorDir F:\InternetSite_in
     -tempDir F:\InternetSite_temp
```

5.5.8 ListSources

`ListSources` returns a list of all documents contained in a collection or in a slice.

Parameters of the command line tool ListSources

`-collection`
Name of the internal collection whose documents are to be listed

This parameter or the parameter `-all` must be specified.

`-all`
Enter `true` to list the documents of a slice.

This parameter or the parameter `-collection` must be specified.

Example 5-7:

```
ListSources -livelinkURL http://livelinkserver.company.example/
         livelink/livelink.exe -username LivelinkUser -password
livelink
     -slice InternetSite -xmlActivatorDir F:\InternetSite_in
     -tempDir F:\InternetSite_temp
```

5.5.9 RemoveCollection

`RemoveCollection` deletes a collection or a slice.

`-collection`
Name of the internal collection that is to be deleted

This parameter or the parameter `-all` must be specified.

`-all`
Enter `true` to delete the slice.

This parameter or the parameter `-collection` must be specified.

Example 5-8:

```
RemoveSources -livelinkURL http://livelinkserver.company.example/
```

```
     livelink/livelink.exe -username LivelinkUser -password
livelink
     -slice InternetSite -xmlActivatorDir F:\InternetSite_in
     -tempDir F:\InternetSite_temp
```

5.5.10 GetSearchEngineMetadata

`GetSearchEngineMetadata` returns information on the available index regions of the slice in the Enterprise Server Search server. These regions are defined when configuring the Enterprise Server search (see "Displaying index regions in Livelink ECM - Enterprise Server" on page 127).

Example 5-9:

```
GetSearchEngineMetadata
     -livelinkURL http://livelinkserver.company.example/livelink/

         livelink.exe -username
         LivelinkUser -password livelink
     -slice InternetSite -xmlActivatorDir F:\InternetSite_in
     -tempDir F:\InternetSite_temp
```

5.5.11 Query

`Query` performs a search in the slice.

`-collection`
: Name of the internal collection that is to be searched

  This parameter or the parameter `-all` must be specified.

`-all`
: Enter `true` to search the slice.

  This parameter or the parameter `-collection` must be specified.

`-query`
: String to be found

`-batchNr`
: Batch number. If the batch number is larger than 1, the first n * batch size documents of a search result are skipped.

`-batchSize`
: Batch size. Maximum number of documents to be returned as search result.

5.6 Problems and solutions

Problem

The **search** on the Enterprise Server **does not return any results**, although there are documents in the system matching the search criteria.

1. Log in to the Enterprise Server system.

   For this purpose, use the URL, user name, and password specified when installing the Search server (see “Installing Enterprise Server search servers in the WCM system” on page 117).

2. In the Search menu, select the slice that you specified when creating the collection to be searched (see “Adding collections in the WCM system” on page 123).

3. Enter a search term and select **Go**.

   If the **Search Results** page does not show any results, there are really no appropriate documents in the slice. In this case, there might have been errors during indexing.

4. To check whether the slice contains any documents at all, enter an asterisk * in the search field.

5. If search results are displayed, check whether the fields **VIPcollection** and **VIPoid** are shown.

6. If these two fields are not shown, change the configuration according to the instructions in “Displaying index regions in Livelink ECM - Enterprise Server” on page 127.

7. Repeat the test.

8. Repeat the test with an extended URL corresponding to the following pattern.

   ```
   http://livelinkserver.company.example/livelink/livelink.exe?
   "func=search&outputformat=xml&slice=<slice name>&nlq=
   <search term>&NLQmode=LivelinkAware&hhterms=true
   ```

Problem

If the **temporary directory** contains many files during normal operation, the files are possibly not moved to the XML Activator directory.

1. Check whether the WCM server managing the collection has access to the XML Activator directory and the temporary directory.

2. Check whether it is possible to move files from the temporary directory to the XML Activator directory.

Problem

If the **XML Activator directory** contains many files during normal operation, the XML Activator process might not be running.

1. On the **Livelink Administration** page, select the **Browse the System Object Volume** link in the **Search Administration** section.
2. Select the **<*Slice Name*> Data Source Folder** link.
3. Select the **<*Slice Name*> Data Flow Manager** link.
4. Check whether the requests are being processed.
5. Make sure that the slice takes the data from the same directory the collection uses for writing the XML Activator files.

Glossary

Access control list

For each WCM object, users, groups, roles, and group-roles that have access to this object can be specified. The individual access rights are specified separately for each principal authorized to access the object. Also called ACL.

API

Application Programming Interface. Livelink WCM Server offers various APIs to access the functionalities of the WCM servers: the WCM Java API, the remote API, the Portal Manager API, and WCM WebServices.

Check in

Staging action of Livelink WCM Server. An object that has been checked out and edited is returned to the WCM system by the action `Check in`. This makes the changes visible in the Edit view. The object is combined with the template again and is available for further editing.

Check out

Staging action of Livelink WCM Server. The content of a WCM object can only be edited after the object has been checked out. A checked-out object is locked for access by other users. The changes to the object do not become available in the Edit view until the object has been checked in.

Collection

An index for a document set is known as a collection. There are internal and external collections. An internal collection is based on a document set managed by a WCM system. An external collection, by contrast, is based on a document set supplied by any external system.

Command line tools

The command line tools can be used to perform indexing actions for external collections. They also make it possible to access information on external and internal collections and on the Index system used.

Extranet

Information platform based on Internet technology for business communication with authorized external users, e.g. partners or customers.

Group

Collection of users for which specific access rights can be defined. User groups are usually tied to organizational units, such as departments and projects.

LDAP

Lightweight Directory Access Protocol. The LDAP is based on the X.500 standard and is supported by most major software manufacturers. LDAP directory services are used to manage user information.

Metadata

Every WCM object has a number of object information assigned to it (e.g. expiration date, language). These are known as metadata.

Object

Each element of a website is integrated in Livelink WCM Server as a single object. Each object is based on an object type, such a "HTML page". Object types can be defined in the Admin client or the Content client.

Object type

The specific kind of object, e.g. `HTML page`, `HTML template`, `Topic`. Various properties of the WCM object result from the object type. The object type is defined when the object is created. There are only a few cases in which it may subsequently be changed. Object types can be edited in the Admin client or the Content client.

Pool

The different connections within a WCM system are managed in pools. These include, for example, connections for communication with an LDAP directory service or for communication between the WCM servers. If a connection is required, it is taken from the respective pool. After the data transfer, the connection is returned to the pool. Pools always combine connections of the same type, e.g. connections to databases (JDBC pools) or connections between WCM servers (WCM pools).

Properties file

A file containing resource information in a defined format (key-value pairs)

Relator

Due to the integration of web content management and Livelink, you can add Livelink objects as WCM objects in a WCM-managed website. These WCM objects are called relators. They always refer to a certain version of a Livelink

object. For integrating a single Enterprise Server item, the WCM system provides the object type `Livelink relator`. For integrating Livelink folders, the WCM object type `Livelink folder relator` is provided.

Release

Staging action of Livelink WCM Server. Quality Assurance checks whether the content and the form of a submitted object meet the quality standards of the company. If so, the object is released. The release transmits the quality-assured version of the object to the Production view, and thus makes it available to the end user in the published website.

Role

Collection of users, similar to a user group, for which specific access rights can be defined. The user role is usually defined in terms of tasks, whereas user groups are generally tied to organizational units, such as departments or projects.

Search server

The combination of Index and Query system in Livelink WCM Server is called "Search server". Each Search server is assigned to exactly one WCM server. It is, however, possible to assign more than one Search server to a WCM server.

Submit

Staging action of Livelink WCM Server. before a newly created or changed object can be published, it must be submitted to Quality Assurance for checking. This makes the changes to the object visible in the QA view.

WCM server

In a WCM system, there are several WCM servers working in parallel (server processes). The exact tasks of a server depend on the server type and server category.

WCM tag

Special element for integrating WCM specific data in an HTML page. WCM tags are used in particular when creating templates.

Index